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VICTORIA

BUREAU OF HYGIENE & TROPICAL DISEASES
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FIFTY-FIFTH REPORT

OF THE

COMMISSION OF PUBLIC HEALTH

FOR THE

YEAR ENDED 30TH JUNE, 1977

PRESENTED TO BOTH HOUSES OF PARLIAMENT PURSUANT TO SECTION 23 (3)
OF THE HEALTH ACT 1958

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COMMISSION OF PUBLIC HEALTH

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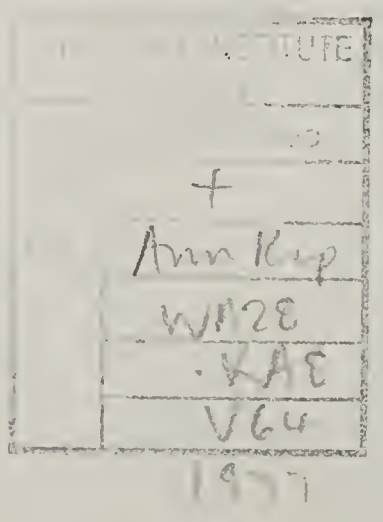

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FIFTY-FIFTH REPORT OF THE COMMISSION OF PUBLIC HEALTH 1976-77

To the Honorable William Vasey Houghton, M.L.C.

SIR,

We have the honour to submit, in accordance with Section 23 (3) of the *Health Act* 1958, our report for the year ended 30th June, 1977.

During the period under review the Commission met on twenty-five occasions.

The period under review has provided a sharp reminder of the importance of communicable diseases and the requirement for continued vigilance and the ability to respond promptly with the necessary control measures.

The importation of a suspected case of Lassa Fever—a known contact of a proven case hospitalised in London—was potentially most serious. This disease, first recognised in West Africa in 1969, has a reputation for extreme infectivity leading to large epidemics with a high case fatality rate. This occurrence required the activation of strict quarantine procedures at the Exotic Diseases Unit at Fairfield where the suspect patient was isolated, and rapid tracing and surveillance of a large number of contacts commenced. Fortunately investigations eventually showed that the patient was not suffering from this disease.

Subsequently, a sharp outbreak of Typhoid Fever occurred amongst persons who had been passengers on an aircraft from overseas. This infection was traced to the consumption of contaminated food taken on board the aircraft in India. Again prompt action was needed to trace and screen all the exposed passengers. This resulted in the discovery of a number of cases of Typhoid Fever who had not previously been suspected as suffering from the disease.

Further outbreaks of illness occurred amongst airline passengers—the first was an outbreak of food poisoning due to the organism Vibrio parahaemolyticus and the other was Salmonella infection due to the organism Salmonella oranienburg.

During May of this year a second Typhoid Fever outbreak occurred at Ringwood and this developed into the largest outbreak of Typhoid Fever to have occurred in Victoria since the " Tropic Snow " desiccated coconut outbreak of 1953. This outbreak was traced to a food handler who was an unknown Typhoid carrier working in a busy " take-away " food establishment. It again required considerable effort on the part of Departmental staff, the staff of the Microbiological Diagnostic Unit, and the staff of Fairfield Infectious Diseases Hospital who handled many suspect as well as proven cases of the disease.

Efforts to ascertain whether any hidden carriers of the disease have resulted from this outbreak are not yet complete and the question of possible further control measures is currently under review.

Two (2) parasitic diseases, namely pediculosis of the scalp and scabies, have become very troublesome in the past few years. Pediculosis in particular has reached epidemic proportions amongst primary school children, and whilst the disease is of a trivial nature the epidemic has increased the demand within the school communities for its eradication. This has led to the involvement of municipal health staff, in addition to the nurses of the School Medical Service, in control activities to a degree not seen since World War 2. The Department also has had to provide a formulation of malathion as the louse appears to have developed resistance to the previously used preparations. Scabies also has caused difficulties, mainly within nursing homes, hospitals and geriatric units, particularly as medical practitioners have become unfamiliar with the diagnosis and treatment. Fortunately, once correctly diagnosed appropriate treatment is simple and 100% effective.

Municipal immunization campaigns are the basis of this State's enviable record in the control of such diseases as Diphtheria and Poliomyelitis. The Rubella Vaccination Campaign designed to prevent the tragedy of congenital rubella was commenced in 1971 but has for a number of reasons failed to achieve the necessarily high degree of acceptance amongst the target group. The Commission of Public Health therefore decided that all girls in the sixth grade of primary school should be offered vaccination each year, and that every effort should be made to ensure that all girls are vaccinated. This policy has been enthusiastically adopted by all municipalities and has happily coincided with an intensive ongoing anti-rubella crusade begun this year by the Deafness Foundation of Victoria.

The Foundation has done a great deal to ensure the success of the schoolgirl campaign and to promote the vaccination of older women of child bearing years, taking the theme " Don't Let Rubella Wreck Your Life ".

A further intake of refugees from Indo-China, totalling 316, occurred in February of this year and as with the prior group who arrived the previous year, these were temporarily admitted to Heatherton Hospital for assessment and screening. In general, these people were in good physical condition but nevertheless tuberculosis was present in eleven, ten persons had positive syphilis serology, 18 had enteric pathogens, 55 were serologically Hepatitis B positive (i.e. carriers for this infection), many had enteric parasites of which Ascaris lumbricoides was the most common (112), and there was one person suffering from leprosy. Apart from the value of this screening from the public health viewpoint, early attention was able to be given to treatment of these conditions and to dental care, family planning, infant welfare and immunization.

At the commencement of the Ringwood Typhoid outbreak an apparent common source outbreak of Salmonella Bredeney gastro-enteritis in infants and young children came to light. Subsequent investigations established that three popular brands of powdered infant milk formulae were contaminated with this organism, and that this had occurred during manufacture at a factory in Northern Victoria. The press, radio and television gave very valuable assistance in warning the public and informing them of measures to take to avoid any infection of young children and infants, and the Companies concerned withdrew their stocks from the market. One of the brands was exported to the South East Asian region and this in turn led to illness amongst infants in some of these countries. At the time of writing, the full implication of this outbreak has yet to be realised ; nonetheless it is clear that the microbiological safety of infant foods, infant feeding practices, and measures required to prevent a similar outbreak will need a thorough study.

EPIDEMIOLOGICAL AND INFECTIOUS DISEASES REPORT.

Hepatitis A.

832 cases were reported which represents a 28% increase on last year's figure. Most cases were in the 15–30 year age group. This represents a shift in the age group of highest incidence which was formerly school-age.

The proportion of rural to urban cases has been falling in recent years which may partly reflect age-specific population changes. Little seasonal variation was noted.

The presumed aetiological agent has now been visualised by immune electron microscopic techniques in early acute illness phase stools, and several new serological tests have made possible the detection of antibodies. These new epidemiological tools give promise of improved prediction, prevention and control for the future.

Hepatitis B.

Of the 144 notifications, 129 were from metropolitan municipalities. Most were diagnosed at Fairfield Hospital and were chiefly young adults. The cities of Melbourne and St. Kilda had the highest incidence (15 and 27 per 100,000 respectively).

By far the majority of cases resulted from intravenous drug abuse. A number of cases, including one death, occurred as a result of skin penetration procedures, viz. tattooing, ear piercing and acupuncture by unqualified persons. The availability of the dialysis unit at Fairfield Hospital and beds for Hepatitis B patients or carriers from general hospitals has reduced institutional spread of the disease.

A death was reported in a 27-year-old female teacher of migrant children.

A number of attempts have recently been made to develop a vaccine from carriers' plasma. While the complexity of these procedures makes production impracticable at present, control by active immunization is at least in sight.

Tetanus.

One case only was reported, in a 16-year-old, partly-immunised, English migrant boy. His condition, which was moderate, followed a slight injury to a finger 12 days previously.

Though the disease is rare in young people due to a public programme of active immunisation, a single case is a reminder that every individual irrespective of age is at risk, unless protected by what is a simple and effective procedure.

Zoonoses.

Notification for these diseases comprised :—

Brucellosis	24
Leptospirosis	8
Hydatidosis	2

Brucella abortus infection presented in all but one case as an acute condition. The nine metropolitan cases were meatworkers. The other cases occurred in dairy farming areas especially in Gippsland and at a large abattoir on the Mornington Peninsula.

Leptospirosis was likewise found chiefly in dairy farmers and there were two veterinarians among the cases, which were predominantly of the hardjo serotype.

The cases of hydatidosis were two middle-aged men from North-eastern and Eastern Victoria who had lived on sheep farms for many years. One presented with a ruptured hydatid cyst and the other had a cyst removed at operation. The cysts were in the liver. The latter case had a lung cyst removed as a child.

Typhoid and Paratyphoid Fever.

The period was dominated by the recent outbreak occurring in May, 1977, and resulting in 35 primary and 2 secondary cases. A 52-year-old English-born woman was the carrier of S. typhi Vi phage type E1 organism unbeknown to herself. She had begun work as a food handler on April 14 at a food establishment in an eastern suburban shopping complex.

The premises were closed on May 5, the day after the first case was reported. A massive exercise was undertaken conjointly with the Microbiological Diagnostic Unit, Fairfield Hospital, and 16 municipal health departments in order to trace, diagnose, isolate and treat all infected persons. A residue of carriers is expected and investigations to detect these are proceeding.

For 1976 there were 9 cases of typhoid fever recorded and 9 cases of paratyphoid fever, 5 of which were type A and 4 type B.

Late last year 3 adults and 2 children became ill a fortnight after returning home on a flight from Europe via the Far East. This was one of 3 separate episodes of food contamination involving overseas airlines. The organism of this outbreak was Vi phage type " 0 ". Altogether 150 people from 44 municipalities were screened. The outbreak raised the questions of safeguards on the food of international airlines and of the promotion of typhoid immunization for intending travellers.

A 55-year-old woman in a State institution was found to be excreting Vi phage type E1 organism. Screening of 290 contacts failed to show any transmission.

A 14-year-old boy became acutely ill and this was traced to his 44-year-old uncle. The organism was Vi phage type 46.

A 12-year-old girl acquired a D8 phage type infection while travelling in Indonesia.

The paratyphoid A infections were in people returning from overseas viz. Nepal, Turkey and Indonesia. A laboratory worker became infected from a culture received from Tonga.

The paratyphoid B infections were as follows :

—a 17-year-old boy who had been on a camping holiday in Victoria.
—a 2-year-old boy whose parents had recently returned from Rome.
—a 9-month-old boy who had recently returned from Asia.
—a 63-year-old woman who was found to be a carrier following major surgery.

Imported Diseases.

All the 46 notified cases of Malaria were imported and most were diagnosed and treated at Fairfield Hospital. Seven of these cases were Plasmodium Falciparum. Three of these who had been travelling in the Wewak area of New Guinea exhibited chloroquine resistance. The other 4 cases had acquired their infections in other parts of New Guinea and one had been to the African and Asian continents. They had either ceased prophylaxis too early or had taken it irregularly. The 39 cases of P1. Vivax were made up as follows :—

Travellers to:	New Guinea	25
	Indonesia and Timor	4
	Africa and South America	1
Migrants from:	South East Asia	7
	India	2

Some of these cases had taken irregular chemoprophylaxis or none at all. Most had not availed themselves of the Chloroquine-Primaquine course upon leaving the malarious area.

The other exotic illnesses were as follows :—

Amoebic dysentery	1	from Bali
Bacillary dysentery	1	from Phillipines
Food poisoning	9	(see below)
Leishmaniasis	1	from India
Leprosy	8	3 from India, 2 from Malta, 1 each from Cambodia, Ceylon and Kenya
Typhoid and paratyphoid fevers ..		(see above)
Tuberculosis		(see appropriate section)

In July a medi-alert was issued by the Commonwealth Health Department following advice from Public Health Authorities in London that an 87-year-old man who had just returned to Australia had been a hospital contact of a proven case of Lassa fever just before departure. The contact who had been admitted to a suburban hospital for a medical condition was, together with 4 secondary contacts, immediately transferred to a high security ward in Fairfield Hospital for further investigation and a safe period of isolation.

All 176 passengers on the same flight to Melbourne, representing 50 municipalities, were contacted and placed under surveillance.

Fortunately, the suspected case was later proved negative by blood tests carried out at Atlanta, Georgia, but the exercise served as a reminder of the need for continued vigilance and adequate hospital and laboratory facilities in dealing with this recently described disease which emanates from Africa and produces a high mortality, particularly among hospital attendants.

Gastro-Enteritis.

There were two outbreaks of food poisoning attributable to food contamination on board airlines from Europe via the Far East and Middle East. Late last year a passenger was admitted to Fairfield Hospital with a cholera-like illness. Faecal culture yielded Vibrio parahaemolyticus, a marine organism which contaminates shellfish. Screening of other passengers revealed 3 other cases. The second outbreak occurred within the same week. Most of the sick patients were off-loaded in Sydney, however a further 5 cases were subsequently admitted to Fairfield Hospital. Three of these were later confirmed as being infected with V. parahaemolyticus.

In September, a bus load of 47 children became ill following the drinking of creek water while on excursion in North-eastern Victoria. Later it was demonstrated that the point of offtake was just downstream of the septic tank outflow from an inn.

At the height of the mushroom season this year there were scattered reports of gastro-intestinal illness following the ingestion of mushrooms. It was shown that these were the yellow staining variety and several boxes of them that had come from the Geelong area were seized.

A small outbreak of vomiting occurred in school children following the ingestion of Taiwanese confectionery which was later shown to contain high concentrations of zinc.

There were 62 Salmonella infections notified for 1976 which represents 100% increase on last year. The serotypes were S. typhimurium (33), bovis morbificans (6), potsdam, bareilly, agona, havana and derby. The infections mainly appeared to be isolated but a clustering of S. potsdam, a relatively novel serotype, around a major teaching hospital drew attention to the possibility of cross-contamination there. Generally most of the infections occurred in the warmer months and affected the younger age group.

Shigella outbreaks characteristically occur in institutions where standards of personal hygiene are poor. There were two outbreaks in mental institutions, one for children and the other for adults, and another in a babies' home in the eastern suburbs. Shigella notifications totalled 45.

The annual winter epidemic of Rotavirus infection among infants which is reported from Fairfield Hospital, began in July and reached a somewhat lower August peak than in 1975. The outbreak subsided in September.

Enterovirus Infections.

These excrementally-spread diseases are not notified but their incidence can be gauged by the number of hospital admissions of viral meningitis which affects mainly children and young adults.

In September two viruses appeared to be predominating viz. Coxsackie virus type A9 and ECHO virus type 19, though occasional cases of Coxsackie virus B5 causing Bornholm disease also occurred. By late summer the predominant virus was ECHO virus type 19 but types 6, 9, 17 and 22 were also isolated.

Respiratory Virus Infections.

Acute respiratory infections are by far the most common illness in Victoria. Their frequency is matched only by the multiplicity of agents which cause them and they cover a whole spectrum of clinical disease which ranges from the mild afebrile common cold to severe pneumonia. Apart from influenza vaccine there is at present no effective preventive measure nor specific therapy.

Their incidence is judged by the number of admissions to hospital. Though these reflect only the more severe forms of illness, the number and type of the viruses isolated give some indication of the prevalence of these agents in the community.

The influenza epidemic due to Influenza Virus Type A/Victoria/75 reached its peak in mid-June. It had severe effects in the elderly and those with pre-existing chronic illness, particularly heart and lung disease.

The annual outbreak of bronchiolitis in babies due to Respiratory Syncitial Virus which has milder effects in older children and adults, reached its peak towards the end of August. Croup due to M. Parainfluenza Type 3 peaked in June, which is earlier than usual. By October these various epidemics had vanished.

In April of this year there occurred an outbreak of croup in infants which was due mainly to M. Parainfluenza Type 1. By the end of June this had almost subsided but bronchiolitis due to Respiratory Syncitial Virus was again seen to be on the increase.

A single strain of Influenza Virus Type A/Victoria/75 was isolated in June but there was no evidence of extensive spread of either Type A or B.

Tuberculosis.

Production and Review.

Since 1948, tuberculosis control programmes throughout Australia have been financed under the Commonwealth/State Tuberculosis Arrangement until the 31st December, 1976, when the Commonwealth Government discontinued to make funds available to the States. The responsibility of continuing a tuberculosis control programme reverted to each State.

The Victorian Government has found it necessary to make modifications in funding, which precluded continuing the compulsory community chest X-ray programme. However, one caravan with an X-ray unit is continuing working in special areas.

These two decisions modify what most adults in Victoria have associated as an integral part of tuberculosis control for more than a generation, and a brief review of the programme during these years may be of interest.

Medical statistics relating to the incidence of tuberculosis are greatly influenced by the accuracy and the criteria used, the breadth of the measures taken to bring these relevant factors to attention and, especially the energy and enthusiasm with which these are applied. Tuberculosis control involves the specific tuberculosis control organisation, the medical profession and the community over a long period, for, from the very insidious and chronic nature of tuberculosis, no one sector from any of these areas separately can have an enduring influence in ultimate control of the disease. This was recognised by those setting up the national tuberculosis control campaign resulting in the Commonwealth/State Tuberculosis Arrangement in 1948.

" Money, when well employed, is an excellent remedy against tuberculosis " (Loffler) and this was made readily available through the Commonwealth Government to enable the campaign to be put into action Australia wide. It was co-ordinated with recommendations through the National Tuberculosis Advisory Council and Commonwealth Department of Health.

Implementation was to include all known techniques available at that time, or as they became available ; and this has been done.

This action involved :—

prevention by use of B.C.G. vaccination, especially for those at special risk ;

aggressive tuberculosis case finding by all means, especially community mass miniature radiography which was to be made compulsory by law ;

clinics and institutions to be set up for diagnosis, treatment and follow-up of tuberculosis patients including examination of tuberculosis contacts ;

a special Tuberculosis Allowance was to be available to enable sufferers to take the treatment recommended ;

all services were to be free of charge to the individual.

Tuberculin Testing and B.C.G. Programme.

B.C.G. vaccination was first used in Victoria in 1948 (see Annual Report 1966). After experience was gained using vaccine to protect tuberculosis contacts, nursing staff and other para-medical personnel, it was extended to " school-leavers " in 1951 and subsequently used for armed service personnel, Commonwealth Public Service officers and their families proceeding overseas and other risk groups such as aboriginal neonates, missionaries, etc. In all groups except the neonates prior tuberculin testing is carried out which yields epidemiological information. In addition, each year some primary schools are selected for tuberculin testing of pupils which indicates the current risk of tuberculosis infection in the community.

The largest group is the " school-leavers ". For many years this has been confined mainly to pupils of secondary schools throughout the State which are visited once each three years. About 90,000 pupils are tuberculin tested each year and usually about 60,000 are B.C.G. vaccinated. Parental consent has been good, about 92–95% or more. The natural positive reactor rate found has slowly declined, and in 14-year-old pupils in 1976 was 1·5%, a marked contrast to the rate of 18% found in school children in the City of Melbourne in 1948.

Migrant children (and adults) born outside Australia yield higher rates than Australian born and the extent varies from country to country. This influences the Victorian figure considerably, especially in areas of high migrant population.

The present policy towards tuberculin testing and B.C.G. is being continued.

Clinics and Institutions.

This programme is continuing although funding is being varied. Despite changed funding of institutions it is hoped that the co-ordination and co-operation previously obtained between the Tuberculosis Branch and the Public Hospitals will continue as it is so important and involves all facets of long term tuberculosis control—treatment, contact and patient surveillance, pensions, statistics, etc.

The maximum number of beds in use for tuberculosis was 1,172 in 1954 ; subsequently demand lessened, and beds, and some entire institutions, have been made available for other medical purposes. About 700 beds were still in use for tuberculosis during the 1960's, but from 1970, the demand declined further and at present there are 208 beds reserved for tuberculosis use. During 1976 the daily average number of persons receiving in-patient care was about 100. This low figure is due particularly to effective modern chemotherapy used against tuberculosis, which has enabled a reduction in the average stay in hospital from 326 days in 1951 to 88 days in 1976, reduced relapses to a minimal rate, and in the longer term helped diminish the infectious reservoir in the community.

Tuberculosis institutions made available for other purposes from 1948 onwards are as follows :—

Greenvale Sanatorium	—	established	1905	closed	1956
Gresswell Sanatorium, Mont Park	—	,,	1933	,,	1970
Dunstan Chalet, Mt. Royal	—	,,	1938	,,	1955
Eleanor Shaw Chalet, Mt. Royal	—	,,	1942	,,	1957
Central Hospital (Old Melb.)	—	,,	1946	,,	1948
Mint Place Annexe (Old Queen Vic.)	—	,,	1948	,,	1951
Fairfield Chest Unit	—	,,	1951	,,	1956
Stonnington, Malvern	—	,,	1952	,,	1957
Henry Watson House, South Yarra	—	,,	1953	,,	1957
Horsham Chalet, Wimmera Base Hosp.	—	,,	1947	,,	1969
Hamilton Chalet	—	,,	1947	,,	1971
Sewell House, Toorak	—	,,	1951	,,	1954

The Department's out-patient clinic services, however, cannot show any such marked decline in demand as although notifications of new patients and relapse of clinical tuberculosis amongst treated patients have declined, other factors have increased the work load. For instance, the shorter stay of patients in hospital requires closer supervision at clinics ; migration and refugee programmes have increased the load of persons with evidence of past tuberculosis infection or disease requiring investigation, treatment and/or surveillance ; the build-up of records of persons discovered by the compulsory mass X-ray surveys with previous tuberculosis require continuing surveillance. However, experience with the present effective chemotherapy has enabled some rationalisation for out-patient clinic services in the last few years and so reduced attendances for certain groups of persons, especially contacts and some others who have been under long term review.

During the 1940's–1950's period, demand for clinic services increased and three new clinics were built—at Coburg, Prahran and Geelong. Total attendances at departmental clinics reached a peak in 1969 when 76,479 were recorded ; in 1976 the figure was 52,130 and will probably remain about this level for some time.

The treatment and investigation of patients at clinics or departmental institutions continue to be free to the patient although it is contemplated that private health insurance funds will be required to meet some of the costs.

Tuberculosis Allowance.

The Tuberculosis Allowance continues to be paid through the Commonwealth Department of Social Security.

Probably the most dramatic change in the tuberculosis situation is shown in figures relating to the number of patients receiving Tuberculosis Allowances for active or potentially active tuberculosis under treatment. The peak figure for payments was in 1951 when 2,039 persons were receiving the Allowance at December 31st. By 1954 the conditions were administered more stringently, but the figure was then 1,453. In 1957 it was 793, and had steadily declined to 67 at the end of 1976.

Notification of New Cases and Deaths from Tuberculosis.

This is the area where criteria, accuracy of recording, technical changes and/or effort are reflected, and where false deductions are easily made. For instance, in 1948, the notification rate of new cases was $32/10^5$.* Until then there were only a few fixed units for miniature X-ray in use. By 1951–1954, more transportable X-ray units were available, case finding by " searching " was given more opportunity and the new case rate rose to $46 \cdot 6/10^5$, although almost certainly there was only a small, actual increase in prevalence of tuberculosis associated with the increase of migrants arriving as they had been well screened for tuberculosis before being accepted.

The reported rates again steadily declined to $23/10^5$ in 1961, but during 1962, there was a great deal of effort, publicity and public education devoted to tuberculosis prior to the introduction of compulsory chest X-rays in October, 1963. New modern X-ray units were purchased and mounted in caravans. These could be taken to any community throughout Victoria where there was a supply of electricity—virtually the whole population. The notification rates again rapidly increased viz : 1963—$28 \cdot 8/10^5$, 1964—$26/10^5$, 1965—$24 \cdot 5/10^5$.

Subsequently, tuberculosis control methods remained constant until the end of 1974. A steady decline in notifications occurred through this period, reaching 321, a rate of $8 \cdot 8/10^5$ in 1974.

During 1975 and 1976 methods of applying compulsory chest X-rays were varied—viz. less X-rays were taken on survey, 3 caravans operated instead of 6 as previously and areas were selected for survey rather than serially. In May 1976, the minimum age for compulsory X-ray was raised to 35 years. In 1975, there were 291 new notifications of patients with tuberculosis, a rate of $7 \cdot 9/10^5$, the lowest recorded in Victoria.

However, in 1976, for the first time since 1963, the number of cases increased. There were 311 new cases, a rate of $8 \cdot 5/10^5$. This is small, but depressing.

The figures for " Deaths from Tuberculosis " in Victoria for many years have been too small to provide help in assessing trends, although the notification of the individual can be of value in finding areas of undetected tuberculosis. However, a " modern miracle " happened when it is recalled that in 1948, the year Streptomycin became available, there were 677 notifications—a rate of $32 \cdot 4/10^5$, and 641 deaths from tuberculosis—a rate of $30 \cdot 6/10^5$. By 1951 new notifications were 1,030—a rate of $44 \cdot 2/10^5$, and deaths 407—a rate of $18/10^5$ and in 1954 1,046 notifications—$46 \cdot 6/10^5$, and 245 deaths—$10/10^5$. In 1975 the rate was $0 \cdot 88/10^5$ from 32 deaths.

It is suggested that the year " 1974 " can be used as a baseline for tuberculosis control in Victoria and that statistics in future years continue to be collected as thoroughly as possible so as to recognise trends in tuberculosis prevalence. There is unlikely to be any short term dramatic change, and any adverse trends may well be masked by other factors. Perhaps the earliest significant signs could be an increase in tuberculous meningitis in children (a horrifying thought), or a raised tuberculin positive reactor rate in young children. For this purpose perhaps primary schools should continue to be selected for regular tuberculin surveying. To wait for any significant general rise in recorded notification rates is likely to result in very delayed action.

In the meantime, there should be no lessening of standards of tuberculosis screening for persons coming to Australia either before or after their arrival. The incidence of increased risk amongst these groups has been well documented and will continue to influence the active tuberculosis prevalence in this State.

Case Register for Active Cases.

This was set up in 1962 and has proved a most valuable section in " medical audit " of our actual control and methods applied. Statistical information has been collated and used for the preparation of many scientific papers prepared by our own staff, and outside the Department. It has brought certain areas to notice for particular attention and traced patients who have failed to notify their movements and otherwise would have been lost to surveillance. The most names registered were 3,547 in 1967. Since then the number has decreased to 1,637 this year.

(* " $/10^5$ " = " per 100,000 " .)

Mass X-ray Surveys.

Mass miniature radiography for tuberculosis case finding was introduced into Victoria in the mid-1940's with fixed units at Prahran Chest Clinic and later at several other sites, including the Central Chest Clinic, South Melbourne Town Hall, Sacred Heart Hospital, Coburg, Williamstown, and Newtown, Geelong. During 1947, the Division of Mass X-ray Surveys was established to discover cases of unsuspected tuberculosis in the community. Initially transportable X-ray units using 35 mm. film were obtained and later one X-ray unit in a mobile van. These units were used in the metropolitan area and taken to larger cities and towns throughout the State. Regular X-ray surveys were also carried out in many larger factories, institutions, etc. At first the novelty of " free X-rays " was very popular, but after the word " RADIATION " was headlined in the press towards the end of the 1950's there was a distinct falling away of attendances from the voluntary community mass surveys.

In 1962, new X-ray equipment using 70 mm. film was procured and 3 mobile caravans built, and with the co-operation of the New South Wales Health Department and the Anti-Tuberculosis Association of New South Wales a much publicised and detailed survey was mounted in the Cities of Essendon and Coburg. Seven caravans were used in a filagree pattern to survey these two municipalities on a voluntary basis to obtain maximum attendances of adults in the area and so enable an assessment of the tuberculosis prevalence. After the first visit, a roll check was made and apparent non-attenders invited to attend for X-ray at a return visit of the caravans. After two visits it was found that only 63% of the adult population had attended, but it was shown that the yield of active tuberculosis from the first visit was double the usual rate being found at mass X-ray surveys, and at the second visit the yield was four times the usual rate. About half of those discovered had not been X-rayed for many years, or at all.

On this advice, the Government decided to invoke the legislation for compulsory chest X-ray surveys. Further X-ray units in caravans were ordered and the first compulsory chest X-ray survey was undertaken in Mildura in October, 1963. Public co-operation was excellent and this enabled thorough roll checking and follow-up of apparent non-attenders which was continued through the later compulsory surveys. After follow-up attendances were generally about 97% of the nominal rolls in each electorate.

From October 1963 until 1974, 3 surveys were carried out throughout all areas in Victoria for adults over 21 years. With each survey there was a significant decline in the incidence of tuberculosis.

In 1975, compulsory surveys were reduced, using 3 caravans instead of 6, and areas were visited by selection rather than serially, also during 1976; the minimum age limit was raised from 21 years to 35 years.

Dr. A. Bolza, Acting Medical Officer in Charge of the Division of Mass X-ray Surveys in his report for 1976 summarises the situation.

> " The year under review saw the end of the Division as a separate entity just short of its 30th Birthday. On the 31st November, 1976 the compulsory community chest X-ray surveys were discontinued, having been in operation since October, 1963. The last electoral district surveyed was Bennettswood and the last films were taken on the 23rd December, 1976, in the Wattle Park Subdivision.
>
> During the existence of the compulsory chest X-ray surveys from October, 1963, to December, 1976, about 45,000 abnormalities were reported by the Division, a ratio of about 6·09 abnormalities per 1,000 70 mm. films taken, or 1 case for approximately every 164 such films. Amongst these were 2,074 active cases of pulmonary tuberculosis, 3/4 of them infectious, about 14,000 cases of inactive or quiescent pulmonary tuberculosis and 2,174 neoplasms in the lungs. Now that the compulsory chest X-ray surveys are discontinued, one can only hope that our share in the detection of pulmonary and other diseases in the community can be taken over by others and thus the high standard of hygiene to which the people of Victoria are accustomed and entitled, can be maintained.
>
> The figures reported in 1976 show an overall increase in the abnormalities, which indicates that despite our efforts in the past, the work is not yet completed. "

In conclusion, it is apparent that the campaign against tuberculosis initiated in 1948 has been a very successful co-operative venture, not only in Victoria, but Australia-wide. However, attention must be directed to the figures for 1976, which show that 346 active cases were reported and 24 persons died with active tuberculosis during the year—figures which are higher than in the previous year. This is adequate warning that vigilance and action must continue to be directed towards tuberculosis control.

Introduction and Review—1976.

Victoria's estimated population at 30th June, 1976 was 3,646,301.

There were 311 new notifications during the year, compared with 291 in 1975, corresponding rates per 100,000 population being 8·5 and 7·9. There was also a small increase recorded for persons with reactivated and chronic active tuberculosis. In all, the total case load was 346 persons with active tuberculosis, 23 more than in 1975.

Year.	Active Cases.				
	New.	Rate per 100,000.	Reactivated.	Chronic.	Total.
1964	820	25·93	72	86	978
1965	790	24·50	84	66	940
1966	649	19·98	78	59	786
1967	599	18·13	80	49	728
1968	535	15·94	57	38	630
1969	497	14·50	44	38	579
1970	421	12·11	61	33	515
1971	416	11·78	23	19	458
1972	371	10·42	42	15	428
1973	369	10·25	38	10	417
1974	321	8·81	31	8	360
1975	291	7·93	29	3	323
1976	311	8·58	31	4	346

Of the new cases reported 44% were born outside of Australia ; most of these were non-British and 30 of them came to Australia within a year. Eight notifications resulted from screening Indo-Asian evacuees. This again emphasises the continuing need for adequate screening for tuberculosis before entry to Australia, or on arrival.

With the decline in notifications resulting from X-ray surveys, it appears that more people are apparently developing symptoms before a diagnosis is established and attend their own doctors or at public hospitals. Those latter sources each accounted for 28% of the new cases, a total of 174 patients, whilst clinics located 63 cases, 20%—which included many from examination of contacts.

Attention also is directed to the increased number of persons reported to have died with or because of active tuberculosis. There were 16 persons whose death was probably directly associated with active tuberculosis and another 8 who had active tuberculosis at the time of their terminal illness due to another condition.

Indo-Asian Evacuees.

In March 1976 the Branch took part in the health screening arranged by the Department of Health for 271 evacuees from camps in Thailand. All were housed at Heatherton Sanatorium in two intakes, each 4 or 5 days whilst thorough medical screening and investigations were carried out. The Branch was responsible for the tuberculosis screening which included chest X-ray, tuberculin testing and if indicated, clinical assessment and treatment, chemoprophylaxis and medical surveillance. Eight persons were notified and retained in sanatorium for a period of treatment, 3 were bacteriologically positive. At subsequent reviews during the year, follow-up of these people has suggested that they have been very appreciative of their introduction to Australia and most have obtained work and are becoming established.

Equipment.

The Victorian Tuberculosis Association has made available to the Branch four Monogham " 675 " ultrasonic nebulizers which are being allocated to Heatherton Hospital and the Department clinics to be used for sputum induction. This very generous gift will be very useful and should contribute towards better bacteriological diagnosis and surveillance for out-patients especially.

Notifications.

During 1976 there were 311 new cases of tuberculosis notified, a rate of 8·53 per 100,000. Of these 251 (81%) were pulmonary cases and 60 (19%) were extra-pulmonary. 78·5% of all cases were bacteriologically proven, pulmonary 78% and extra-pulmonary 80%. There were 216 males (69·5%) and 95 females (30·5%).

Bovine type mycobacteria were isolated from 4 patients.

There were 5 new cases reported from whom atypical mycobacteria were isolated.

Age Groups.

The distribution of notifications in age groups is listed below. The figure for children under 15 years is 11% of the total.

31% of all new cases were 60 years and over.
72% of all new cases were 35 years and over.
61% of all new pulmonary cases were males 35 years and over.
44% of all new pulmonary cases were 50 years and over.

Migrants.

44% of the year's notifications were from persons born outside Australia, i.e. 138 cases. The 1971 census figure is 22·8% of the Victorian population. 28 persons were British and 110 non-British. 30 persons (22%) were reported within one year of arrival (27 non-British) ; of the 60 extra-pulmonary cases reported 39 were born outside Australia and 5 were British.

Extra-pulmonary Tuberculosis.

There were 60 cases reported. Tuberculosis of the renal and genital organs continues to be the most common—37 cases. There were 6 cases of bone and joint tuberculosis and 1 case of meningitis. Tuberculosis of lymph glands is less this year ; 9 cases were reported ; some of these are to atypical mycobacterial infection.

Source of Notification.

Mass X-ray surveys were responsible for 56 cases (18%) of the pulmonary forms. Hospitals were credited with 87 (28%) of the total and private medical practitioners were responsible for 87 (28%). State clinics reported 63 cases (20%). There were 5 notifications from death certificates.

Two cases were reported from mental hospitals, one new case was detected by the routine survey of inmates on entry to Pentridge and 3 cases resulted from B.C.G. Division activities.

Reactivation.

There were 31 persons previously notified whose tuberculosis again became active after at least three years stability. 23 were bacteriologically proven at relapse. Pulmonary relapse occurred in 22 cases and extra-pulmonary in 9. 13 of the cases had been stable for 15 years or longer, 7 had no previous chemotherapy and 8 had chemotherapy for less than 2 years. Only 6 on review were considered to have had satisfactory courses of chemotherapy.

In addition, there were 5 cases whose lesions again became active after periods of stability from 1 to 3 years.

Case Register.

On 31st December, 1976, the Case Register for active cases had 1,637 persons recorded of whom 1,430 had pulmonary and 207 had extra-pulmonary disease. 439 listed names were removed from the Register during the year. 716 patients were receiving chemotherapy.

The Case Register continues to be an important adjunct to tuberculosis control, especially aiding supervision of persons changing their places of living, and those who carry a higher risk of relapse, or risk to others if they relapse (e.g. kindergarten workers, school teachers, etc.). Special lists of names of such people are kept to enable closer supervision.

Appreciation is again acknowledged for the co-operation of the staffs of the Bacteriological Laboratory at the Fairfield Hospital and the Repatriation Department and to many private medical practitioners who supply information in this important work.

" *Chronic Positive* " *Cases.*

A record is maintained of patients who are known to have had active disease with positive bacteriological examinations for twelve months or longer. At 31st December, 1976, there were 4 " chronic positive " cases, one person excreting atypical mycobacteria.

Deaths.

The figure supplied by the Commonwealth Bureau of Statistics for deaths is not yet available, but office records show 64 male and 22 female deaths. Of these, 24 persons had had evidence of active tuberculosis at death or within the previous six months. The average age at death was 66·6 years.

Tuberculosis Allowances.

At 31st December, 1976, there were 67 persons being paid the Tuberculosis Allowance, compared with 68 at the end of 1975. Of these persons 54 were men and 13 were women, 29 were receiving in-patient care and 38 were out-patients. There were 57 (85%) in receipt of the Allowance for less than one year, 9 between one and two years and 1 between two and three years. For those receiving the Allowances for less than a year, the average duration of payment was 5·2 months and of the 103 cancelled during the year, 57 returned to work, 24 transferred to other social welfare benefits, and the others for various reasons.

The Tuberculosis Allowance is a special allowance payable through the Commonwealth Social Security Department and is primarily intended to encourage and enable those with active and infectious or potentially infectious tuberculosis to cease work and accept treatment.

Mass X-ray Surveys.

During the year surveys were undertaken in 18 electorates and 412,044 miniature X-rays were taken. There were 62 persons with active tuberculosis discovered—a rate of 0·15 per 1,000 X-rays, 191 cases of cancer in the lung—a rate of 0·46 per 1,000 X-rays, and 62 cases of sarcoid a—rate of 0·15 per 1,000.

Persons aged 35 years and over yielded active tuberculosis at a rate of 0·2 per 1,000.

Technical faults from the caravan units were recorded at a rate of 0·16 per 1,000 and the recall rate from 70 mm. films was 5·2 per 1,000.

Summary of Results of X-ray Surveys, 1976.

X-rayed	TOTAL	: On Survey ..	.. 367,671
	412,044	Milton House	.. 42,704
		Pentridge ..	.. 1,520
		Gresswell ..	.. 149

Abnormalities	*Persons*	*Rate per* 1,000
Active Tuberculosis	62	0·15
Inactive Tuberculosis	579	1·41
Non Tuberculosis	1,935	4·07
(Includes carcinoma)	191	0·46
(Includes sarcoidosis)	60	0·15

Age Group.	Active Cases.	Inactive Cases.
Under 50 years	rate 1 : 12,100	rate 1 : 1,502
50 years and over	rate 1 : 4,235	rate 1 : 427
All ages	rate 1 : 6,645	rate 1 : 711
35 years and over	rate 1 : 5,056	rate 1 : 533
Pulmonary Cancer .. .. .. rate 1 : 2,157		

Doctors' Referrals.

For persons referred by doctors to the Division of Chest X-ray Surveys for X-ray examination 234 showed pulmonary abnormalities. None were found to have active tuberculosis and 39 considered to have significant inactive lesions.

Pentridge.

Routine chest X-ray examinations of inmates on entry to Pentridge continued and during the year 1,596 X-rays were taken, but owing to internal problems the numbers are low. One active case was found. In the 9½ years of operation 24 cases have been located from 18,932 persons examined —rate of 1 active case for every 788 X-rays.

Tuberculin Testing—B.C.G. Vaccination.

Tuberculin testing, using C.S.L., P.P.D., has continued in schools with pupils above Grade 6, i.e. 12 years old and above. B.C.G. vaccination is offered to the negative reactors. The present programme permits visiting all areas of the State every three years and consent rates for pupils last year were over 95%. In all 88,229 pupils were examined over the year, yielding a natural positive reactor rate of 1·5% and 58,711 pupils were vaccinated. Of 28,173 pupils vaccinated in previous years, 79·2% showed positive tuberculin reactions.

Rates for School Children.

Age 12 years 16,027 tested 1·1% natural reactors : 1975 : 1·2%
Age 13 years 18,347 tested 1·3% natural reactors : 1975 : 1·1%
Age 14 years 17,191 tested 1·5% natural reactors : 1975 : 1·4%

Post B.C.G. Re-examination.

All ages and groups—
(3/12 to 12+ years after vaccination) .. 2,810 tested 83%+ve : 1975 : 86%

Contacts and others—
(3/12 after vaccination) .. .. 807 tested 94%+ve : 1975 : 92%

In addition "all age" surveys of primary school children were carried out in two city municipalities, Footscray and Richmond. The consent rate was 97%. 6,232 pupils were tested and the natural reactor rate was 0·64%.

Surveys have also been made of various other groups, including one contact survey in a primary school and another in a hospital—in all 91,044 were examined and 59,574 vaccinations performed during the year.

Bacteriology.

Reliable bacteriological support is essential in tuberculosis detection and control. Appreciation is again expressed for the co-operation and help given by the staff of the Tuberculosis Laboratory at Fairfield Hospital.

As in 1975 this year's report does not include isolations from cultures carrying over into 1977.

During the year the Laboratory's work resulted in :—

15,971 direct smear examinations,
16,093 cultural examinations,
146 animal inoculations,
2,098 sensitivity tests.

In addition to the routine work from the Tuberculosis Branch the Laboratory is a reference laboratory for tuberculosis bacteriology. A large number of isolations from laboratories throughout Victoria and Tasmania were received for identification of isolates and sensitivity testing. A total of 29 patients from Tasmania had isolations examined.

Excluding Repatriation and Tasmanian patients isolations of tubercle bacilli were detected from 271 patients of whom 237 were new cases, 13 were " carry over " cases from the end of 1975, 20 were from reactivated cases, and 1 was from a person with chronically active tuberculosis.

Sensitivity tests included all new patients, relapses and reactivations against streptomycin, isoniazid, ethambutol and rifampicin for the full year, and P.A.S. for part of the year. No cases of primary resistance to ethambutol or rifampicin were detected.

Primary Resistance.

There were 8 cases of primary resistance detected, 5 were from migrants. In the past 13 years there have been 129 cases of primary resistance detected and 93 of these persons were born outside of Australia.

Resistance after Chemotherapy.

Two patients previously treated with chemotherapy showed resistance to one or more drugs. Of these 1 was listed as " chronic positive " and one developed resistance during treatment.

Bovine Type.

Four isolations were identified, (2 males and 1 female adults with pulmonary disease and a female adult with renal disease). The two males had worked with cattle.

Treatment.

Anti-tuberculosis chemotherapy used throughout the State is now almost entirely confined to isoniazid, rifampicin, streptomycin and ethambutol. Relapses are greatly reduced and the stay in hospital is less. For the first time this year the average length of stay for patients at Heatherton Hospital was less than 3 months.

In line with changes elsewhere our policy is to reduce the length of treatment for some patients but to continue the therapy regularly for at least a year after negative bacteriology results have been confirmed.

The major problem remains, as always, to ensure that each patient takes every dose ordered for the full period. Dr. Milne, Medical Superintendent, Heatherton Hospital, summarises the situation, " the most difficult part of management is most certainly due now to social and personality problems and not due to actual methods of medical treatment ".

Chemoprophylaxis.

203 persons commenced courses of chemotherapy as a prophylactic agent against tuberculosis. These were mainly young people who were known to have had recent contact with an open case of tuberculosis or school children with large tuberculin reactions.

Institutions.

The beds reserved in Victoria for tuberculosis are recorded as 208, excluding 23 at the Repatriation Department, but many are in use for other purposes. Usually there are about 100 beds occupied by tuberculosis patients.

At Heatherton Sanatorium, total 259 beds, 129 beds have been released for other purposes—44 beds are available to Prince Henry's Hospital and 85 to the Alcoholic and Drug Dependent Persons Services Branch. About 70–80 beds have usually been occupied for tuberculosis.

The Austin Hospital continues to provide for Departmental patients requiring specialised treatment for extra-pulmonary and pulmonary tuberculosis and for specialised investigation. This unit is being shared as a chest unit for non-departmental patients.

In the country, facilities continue to be provided at base hospitals for the care of uncomplicated tuberculosis patients. The treatment at these centres is in the care of local medical practitioners employed by the Department on a part-time basis. At five of the ten base hospitals the daily bed occupancy for tuberculosis patients for the year has been " one or less than one. "

The Mental Hygiene Authority treats all its patients with known or suspected tuberculosis in a special ward in Mont Park Hospital and facilities are provided at the Royal Women's Hospital for midwifery in tuberculous women as the need arises.

Heatherton Sanatorium Laboratory.

The work during the year for in-patients and out-patients included :—

4,540 Haematology Investigations
4,322 Biochemistry Investigations
54 Serology Investigations
1,146 Microbiology Investigations
173 Audiograms Investigations
442 Regular Visual Testing
159 Isoniazide Phenotyping
460 Sputum Induction, Nebuliser, F.C.G. etc.
159 E.C.G.'s
366 Other activities.

Bureaux and Clinics.

The policy to rationalise the prolonged surveillance of certain groups at chest clinics has probably stabilised, only a small drop is recorded in attendances—52,130 in 1976 compared with 52,893 during 1975. Routine B.C.G. vaccination of aboriginal children as early in life as possible is proceeding throughout the rural areas of the State.

The Prahran Chest Clinic now serves a population of approximately 446,384. There were 9,805 attendances during the year including 1,884 at public X-ray sessions. 31 new cases were reported, 4 with reactivated tuberculosis. In addition there were a further 26 notifications and 1 reactivation from other sources in the area. Mass X-ray surveys were conducted in 7 electorates of this area during the year.

The estimated population served by the Northern Suburbs Chest Clinic is 494,500. Attendances recorded were 13,835 including 2,581 at public X-ray sessions. 31 new cases were discovered, and 2 with reactivations. In addition there were 17 new notifications from other sources in the area. No mass X-ray surveys were conducted through the area during 1976.

The country bureaux at Ballarat, Bendigo and Geelong continue satisfactorily. The attendances at Ballarat were higher and recorded at 3,111 during the year, and 11 new active cases of tuberculosis were discovered. At Bendigo attendances were slightly higher, 1,634. Dr. Hardman reports 4 notifications of active tuberculosis and no reactivations for the Northern Health Area. At Geelong there were 4,088 attendances recorded, including 991 at public sessions. 5 active cases of tuberculosis were located.

Out-patient clinics are also conducted in association with the treatment centres at seven other base hospitals and special clinics continue periodically at Traralgon, Moe, Wonthaggi, Swan Hill and Robinvale, conducted by Departmental medical officers. 437 persons attended.

Appreciation is extended to all the part-time medical practitioners who accept responsibility for tuberculosis control and care of patients in these country areas.

Visiting Sisters.

The liaison work carried out between patients and medical officers by the Visiting Nurses continues to contribute a very important part in the Victorian Tuberculosis Service, both in the country and city areas. Visiting Nurses carried out 7,734 home visits and the logs of the cars used in the country showed that 275,462 km. were covered in the performance of their duties. The routine contact survey work and seeking out and persuading those reluctant to attend for medical review are ever necessary.

The Visiting Sisters are continuing to take increasing responsibility in patient supervision, especially for patients taking chemotherapy. With an increasing proportion of patients with active tuberculosis being reported from private practitioners and public hospitals the Visiting Sister at times is the only direct contact the Branch has with these patients to bring to attention facilities or benefits available to them through Department resources, such as supply of drugs, contact surveillance, Tuberculosis Allowance, etc.

Social Welfare.

Social Welfare this year followed a similar pattern to 1975, the help given involving 255 new patients and 93 old patients, most of them requiring continuing support. Financial assistance continues to be the greatest problem, and appreciation is acknowledged for the help received from the Department of Social Security and the Victorian Tuberculosis Association.

Requests for placement on discharge from Heatherton for the elderly and the "homeless" have been more numerous. This area is becoming increasingly difficult due to lack of nursing homes and Government geriatric homes.

The Housing Commission has granted accommodation to two families referred to them for priority on medical and social grounds.

There was a greater demand for clothing from the store, particularly for men and children. Petty cash provided through the Victorian Tuberculosis Association was used for immediate assistance in many areas, especially help in providing necessary clothing on admission to Heatherton for young children, where these costs would have strained family finances or children where family support was inadequate.

Crochet rugs received from the Camberwell Country Women's Association were distributed to elderly Heatherton patients and in response to requests from Visiting Sisters during the winter for a rug for an elderly person requiring a little warmth.

" The Sun Toy Fund " provided a wide range of toys for all ages for distribution to our families in need. And as usual, the Victorian Tuberculosis Association has continued to be sympathetic in the most practical way to all our requests for help in all ways—finance to meet emergency debts, grants in aid, food orders and occasionally shelter, floor coverings, Lord Mayor's Camp at Portsea for children and Christmas Food Vouchers.

Conferences.

The 1st Australasian Tuberculosis Clinical Conference was held at Wellington, New Zealand, in October, (The Tenth Annual Tuberculosis Clinical Conference). Victoria received invitations from the Commonwealth to send its Director and four medical officers. Four of the members presented papers.

Medical conferences continued during the year. These stimulate contact and liaison between medical staff of the Branch and the main teaching hospitals and enable our medical staff to see and discuss clinical work proceeding outside our own services.

Legal Powers.

The provisions of the Health Act have not been required this year to have persons with tuberculosis attend for examination or to be admitted to sanatorium.

Training.

Medical students continued to attend Geelong Chest Clinic for instruction. A number of post-graduate courses in different fields of nursing include visits to our metropolitan institutions and clinics or include part of their training from our staff.

For non-English speaking patients, classes in English language have been conducted at Heatherton and give good basic training. The classes were very much appreciated. In addition, schooling has been available for child patients.

Two of our nursing staff, Sister Friend and Sister Kippax, were sponsored by the Department and completed post-graduate nursing courses conducted by the College of Nursing, Australia, and obtained their Diplomas in Community Health Nursing. They have both returned and are contributing a great deal in administrative duties and stimulating an interest in a continuing education programme for their colleagues and to other staff members.

10222/77.—2

Summary of Tuberculosis Statistics—Victoria 1976.

Population 3,746,000 (Estimated 30th June, 1976).

Year.	Notification of New Cases.		Deaths.		Tuberculosis Allowances Paid at December 31st.	Mass X-ray Surveys.		School Tuberculin Survey.		No. of Beds Available at Sanatorium and Chalets.	Average Stay in Sanatorium Days.
	Number.	Rate per 100,000.	Number.	Rate per 100,000.		Number X-rayed.	Possible Active Tuberculosis.	No. Mantoux Tested (O.T.—10 T.U.) *(P.P.D.—10 I.U.)	+ve Reactors at Age 14.		
1948.. ..	677	32·37	641	30·65	1,368 (State Scheme)	150,000	..	..	..	735	252
1951.. ..	1,030	44·20	407	17·88	2,039	277,938	767	20,524	18·0	1,134	326
1954.. ..	1,046	46·59	245	9·99	1,453	463,210	621	17,869	10·3	1,172	285
1957.. ..	813	30·40	145	5·37	793	437,796	194	29,161	8·1	782	144
1960.. ..	863	29·50	138	4·70	444	380,598	194	40,400	6·9	744	141
1961.. ..	698	23·32	127	4·35	406	405,913	190	47,145	4·7	744	155
1962.. ..	781	25·65	101	3·35	411	456,559	185	47,338	3·9	744	160
1963.. ..	888	28·80	109	3·55	390	478,861	255	48,680	3·3	744	165
1964.. ..	820	25·93	121	3·84	290	428,306	286	75,897	4·1	729	138
1965.. ..	790	24·50	106	3·29	292	596,994	288	78,945	4·1	715	139
1966.. ..	649	19·98	128	3·94	223	662,576	252	90,643	4·0	705	132
1967.. ..	599	18·13	93	2·82	235	641,974	235	72,636	5·5	705	135
1968.. ..	535	15·94	68	2·03	189	663,707	211	90,116	2·5	686	137
1969.. ..	497	14·50	61	1·78	160	672,925	185	89,541	2·6	672	124
1970.. ..	421	12·11	48	1·37	113	671,914	119	81,405	2·1	496	117
1971.. ..	416	11·78	61	1·73	91	694,459	138	*93,933	3·2	384	120
1972.. ..	371	10·42	52	1·44	127	652,752	95	*96,249	3·2	340	96
1973.. ..	369	10·25	45	1·23	80	598,721	81	*87,495	2·1	340	102
1974.. ..	321	8·81	52	1·41	73	354,256	70	*92,265	2·0	301	101
1975.. ..	291	7·93	32	0·88	68	401,397	46	*92,645	1·4	301	99
1976.. ..	311	8·30		0·85	67	412,044	62	*88,229	1·5	208	88

Poliomyelitis and Allied Diseases.

Incidence of Poliomyelitis.

No case of poliomyelitis was reported for the 1976 calendar year.

Distribution of Sabin Vaccine (Oral).

539,720 doses were issued during the year taking the total distribution throughout Victoria to 7,736,470 since commencement.

In the last year the recommended dosage of the oral Sabin Vaccine has been increased to six to promote greater community protection. The extra doses are given at 15–18 months, 5–6 years and at 15–19 years.

The Department continues to provide orthopaedic supervision and physiotherapy services to those patients who have suffered an attack of poliomyelitis, multiple sclerosis or polyneuritis. Patients are still being referred for the first time who have suffered in past epidemics of poliomyelitis. A number of these come from other States or from overseas countries.

In appropriate cases financial assistance is extended for the purchase of splints and appliances. Those patients in receipt of a pension or social security benefit receive their equipment without charge.

Clinics are held throughout the metropolitan area and in most of the country districts, but those patients unable to attend clinics are seen on domiciliary visits.

On 1st July, 1976, following the closure of the Lady Dugan Centre, the Poliomyelitis Division treatment centre was transferred to Ward 9, Fairfield Hospital. Those patients who could not attend the Fairfield Hospital Clinic were referred to treatment centres near to their homes. These were mainly multiple sclerosis patients needing regular attention.

Additional referrals to the Division during the year under review have been :—

Poliomyelitis	36
Multiple Sclerosis	11
Polyneuritis	1

Other Activities of the Poliomyelitis Division.

The physiotherapy staff have continued to provide assistance to Mental Health Centres. These include Janefield Special School at Bundoora, Sunbury, Stawell, and Larundel. The latter now has its own staff and needs no further help.

The Division provides physiotherapy services to children accommodated at the Allambie Reception Centre, Social Welfare Department. A programme has been introduced to provide, on discharge, continuing physiotherapy treatment to children considered in need of extended treatment.

In association with the Sisters-in-Charge at selected Infant Welfare Centres Divisional staff conduct ante- and post-natal treatment clinics in some suburbs. The innovation of cluster groups in these clinics commenced during the year, to provide health education in the development of normal posture and movement.

Work has been extended in the field of developmental problems in children to further areas. The age limit has been extended to 16 years to enable children needing help to be seen for a longer period.

Children classified as being in the Specific Learning Difficulties group are referred by the School Medical Service for assistance.

Regionalisation of physiotherapy services is being achieved where possible, particularly in the country areas so that a greater range of service is possible to each area.

Distribution of Immunisation Vaccines to Municipalities 1976–77.

(With 1975–76 figures for comparison.)

Material.	Number of Doses.	
	1976–77.	1975–76.
Sabin Vaccine	539,720	333,710
Measles Vaccine	79,438	88,633
Rubella Vaccine	54,577	44,610
Triple Antigen	239,105	258,847
A.D.T.	63,647	47,216
Combined Diphtheria Tetanus Prophylactic (C.D.T.)	99,836	98,043
Purified Tetanus Toxoid (A.P.A.)	19,911	16,287
Smallpox Vaccination	17,830	21,766
Diphtheria Prophylactic (P.T.A.P.)	1,260	1,015

Venereal Diseases.

Statistical and other information presented in this annual report covers the period from the 1st January to 31st December, 1976.

Some comparative figures for the following six months (1st January to 30th June, 1977) are also included.

Table I.—New Patients at the Government Clinic.

Year.	Attendance of New Patients.			Gonorrhoea.			Syphilis.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1967	3,124	1,244	4,368	824	381	1,205	33	4	37
1968	3,015	1,201	4,216	734	335	1,069	40	5	45
1969	3,016	1,167	4,183	796	372	1,168	70	8	78
1970	3,329	1,546	4,875	952	721	1,673	38	4	42
1971	3,558	1,639	5,197	1,014	659	1,673	34	10	44
1972	4,309	2,095	6,404	1,009	832	1,841	38	8	46
1973	4,960	1,991	6,681	868	809	1,677	26	9	35
1974	5,392	2,092	7,484	933	714	1,647	41	5	46
1975	6,406	2,415	8,821	1,120	590	1,710	59	8	67
1976	6,445	2,283	8,728	1,010	406	1,416	55	9	64

Table I indicates the attendance figures for new patients at the Government Clinic for the year, and for the previous nine years, including the number of patients diagnosed as suffering from syphilis and gonorrhoea.

Table II.—New Patients at the Government Clinic for the First Six Months of 1976 and 1977.

Year.	Attendance of New Patients.			Gonorrhoea.			Syphilis.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1976 (6 months January–June) ..	3,286	1,163	4,449	534	233	767	33	3	36
1977 (6 months January–June) ..	3,430	1,126	4,556	513	189	702	11	2	13

For the first time for many years there was a small decline in the overall attendances at this clinic, with male figures approximately the same, and those for the female section slightly lower.

Attendance figures for the first six months of 1977 are marginally higher than the corresponding period for 1976, whilst the number of cases of gonorrhoea and syphilis are lower.

It can be seen from the attendance figures that there is about a 3 to 1 attendance ratio of male to female patients, with the gap slowly closing each year.

Official records show that this ratio thirty years ago was of the nature of about 8 to 1. This increase in female attendances is the direct result of a firm attitude to contact tracing of the female partners of positive male cases, so that a greater number of asymptomatic but highly infectious female patients are being treated quickly, with a lessened risk of further transmission of their disease.

Table III.—Gonorrhoea and Syphilis Notifications.

Source.	Gonorrhoea.			Syphilis.		
	Male.	Female.	Total.	Male.	Female.	Total.
Government Clinic	1,010	406	1,416	55	9	64
Others— Metropolitan and Country	409	114	523	92	24	116
1976	1,419	520	1,939	147	33	180
1975	1,488	753	2,241	150	26	176
1974	1,189	858	2,047	88	40	128
1973	1,038	893	1,931	56	88	144
1972	1,305	925	2,230	57	54	111
1971	1,345	734	2,079	61	38	99
1970	1,300	768	2,068	59	14	73
1969	1,175	450	1,625	97	54	151
1968	1,189	424	1,613	65	19	84
1967	1,361	485	1,846	59	33	92

Notification for other venereal diseases is slight with three female cases of chancroid (soft sore) being the only other notifiable disease reported.

Amongst the gonorrhoea cases, two were reported as suffering from the serious infection of (neonatal) gonococcal ophthalmia.

It was gratifying to note that no cases of congenital syphilis were reported this year.

Table III shows that the incidence of both syphilis and gonorrhoea has fluctuated around a relatively stable figure since 1970 and appears to have " peaked " at least temporarily.

The more common gonorrhoea has remained around 2,000 with minor rises and falls, whereas the potentially dangerous syphilis has more than doubled since 1970, although the numbers are still relatively low, and in no way reflect the image of any epidemic.

Most notifications detailed are from the Government Clinic, which is to be expected, but notifications from other sources are still increasing each year. Notifications for syphilis are greater from outside sources, which tends to indicate greater awareness and responsibility by private practitioners towards these diseases.

TABLE IV.

FEMALES.							
	Government Clinic.			Rest of Victoria.		Total.	
Age Groups.	Attendances.	Gonorrhoea.	Syphilis.	Gonorrhoea.	Syphilis.	Gonorrhoea.	Syphilis.
0–14	45	1	..	..	..	1	..
15–19	685	131	1	29	..	160	1
20–24	711	156	3	25	1	181	4
25–29	395	63	2	21	11	84	13
30–34	187	29	1	10	3	39	4
35–39	109	13	..	6	3	19	3
40–44	54	4	2	4	1	8	3
45–49	43	8	..	1	..	9	..
50+	54	1	..	9	5	9	5
Unspecified ..	..	..	..	9	..	..	..
Total ..	2,283	406	9	114	24	520	33

Tables IV (Female) and V (Male) provide a breakdown of attendances and cases into age groups. The male table follows the usual pattern of previous years, but the female one for the first time demonstrates a shift to the right, so that it approximates to that for the male, namely with the highest incidence of disease in the 20–24 age bracket rather than the 15–19 as previously. These figures will be watched closely in the future, to determine whether there is a definite trend to this pattern, or whether it is just an isolated occurrence.

TABLE V.

MALES.							
	Government Clinic.			Rest of Victoria.		Total.	
Age Groups.	Attendances.	Gonorrhoea.	Syphilis.	Gonorrhoea.	Syphilis.	Gonorrhoea.	Syphilis.
0–14	..	..	..	2	2	2	2
15–19	896	162	3	23	1	185	4
20–24	2,043	332	14	158	16	490	30
25–29	1,698	239	7	86	18	325	25
30–34	687	95	12	54	20	149	32
35–39	454	91	5	21	9	112	14
40–44	276	65	6	12	9	77	15
45–49	210	14	4	9	6	23	10
50+	181	12	4	6	4	18	8
Unspecified ..	..	..	..	38	7	38	7
Total ..	6,445	1,010	55	409	92	1,419	147

TABLE VI.

SYPHILIS.								
Primary.		Secondary.		Early Latent.		Late Latent.		Total.
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
45	6	65	7	34	19	3	1	180

In Table VI the cases of syphilis have been arranged according to sex, and by stages. As in previous years most cases fall into the infectious group (primary and secondary).

It should be noted that not many females are diagnosed at an early stage with syphilis, and so they are probably infectious for a longer period than the males, with corresponding potential for disease transmission.

The greater percentage of male infectious syphilis cases are still acquired through homosexual practices.

The true incidence of all diseases is by relation to a standard, and this is illustrated in Table VII where the notified figures for both syphilis and gonorrhoea are standardized against a population rate of 100,000.

The very high rates prevailing fifty years ago dropped dramatically in the 1950's to double or treble in the 1960's, and now, as previously reported, appear to have stabilised. Even with gonorrhoea the rate shows some decline, with an approximate ratio of 10 to 1 for gonorrhoea and syphilis. This can be compared with a ratio of only 2 to 1 (approx.) in 1917 and 1918, which clearly indicates that there has been a marked reduction in the incidence of syphilis since that time, with a less spectacular fall in numbers and incidence for gonorrhoea.

TABLE VII.

Year.	Venereal Diseases in Victoria.				
	Attack Rate per 100,000 of Mean Population.				
	Total Population.	Gonorrhoea.		Syphilis.	
		Number.	Rate per 100,000.	Number.	Rate per 100,000.
1917	1,417,000	5,448	384·5	2,657	187·5
1918	1,437,235	5,076	353·2	2,135	148·5
1919	1,503,035	5,743	382·1	2,343	155·9
1927	1,741,832	4,601	264·2	918	52·7
1928	1,761,746	4,613	261·8	1,024	80·6
1929	1,778,269	4,584	257·8	659	37·1
1944	1,997,954	1,916	95·9	428	21·4
1945	2,015,107	2,302	114·2	421	20·9
1946	2,039,769	2,575	126·2	452	22·2
1954	2,477,986	467	18·8	133	5·4
1955	2,546,332	573	22·5	180	7·1
1956	2,618,112	651	24·9	128	4·9
1964	3,161,537	1,302	41·2	59	1·9
1965	3,233,938	1,586	49·0	85	2·6
1966	3,247,478	1,821	56·1	56	1·7
1967	3,323,400	1,772	59·3	106	3·1
1968	3,384,100	1,580	47·7	96	2·8
1971	3,496,161	2,079	59·4	99	2·8
1972	3,547,400	2,230	62·8	111	3·1
1973	3,600,000	1,931	53·0	144	4·0
1974	3,645,300	2,047	56·1	128	3·5
1975	3,673,400	2,241	60·1	176	4·7
1976	3,746,000	1,939	51·7	180	4·8

Other Items Relating to Venereal Diseases Management.

1. *Fairlea Women's Prison.*

Prisoners at this establishment are still examined regularly on a weekly basis, and the overall level of venereal diseases is low. 192 prisoners were examined, and 3 cases of gonorrhoea were detected, and two cases of latent syphilis.

2. *Lymphogranuloma Venereum Survey.*

An attempt was made to follow up those cases examined in 1973, who were found to have a significantly high titre in their blood for this disease.

The exercise had to be abandoned, owing to the almost complete lack of response by these patients, to return to the clinic for review and further testing.

3. *Resistant Strains of Gonorrhoea.*

In the last year a strain of gonorrhoea which is completely resistant to penicillin treatment has been detected in various areas of the world with eight cases so far in Victoria.

The organisms produce penicillinase as part of their metabolism and so any penicillin administered to a patient is immediately destroyed.

The condition is still curable using other medication such as Trobicin or Tetracyclines, but the important fact that emerges is that if this strain reaches epidemic proportions, the cost of using these expensive drugs will become enormous.

4. *Winlaton Training Centre.*

Groups of patients from this Centre used to be brought to the Government Clinic under escort for examination twice weekly. As this routine was unsatisfactory, a medical officer from the Clinic now visits Winlaton once weekly to carry out the necessary examinations.

Exotic Diseases Hospital, Fairfield.

At 31st December, 1976, when the Victorian population was 3,763,000, there were 46 persons being treated for Hansen's disease, 4 as in-patients and 42 as out-patients.

The following table shows the sex and nationality of these patients.

In-patients.		Out-patients.		Nationality.
Male.	Female.	Male.	Female.	
1	..	1	..	Australian
..	..	..	1	Cambodian
..	..	..	2	Greek
2	..	11	5	Indian
..	..	1	..	Indonesian
..	..	..	1	Italian
..	..	1	..	Lebanese
..	..	10	1	Maltese
..	1	1	..	Seychelles Islander
..	..	1	..	South African
..	..	4	1	Sri Lankan
..	..	..	1	Vietnamese
3	1	30	12	

Out-patients receive regular medical examinations and supplies of drugs.

The hospital is available to accept persons found to be suffering from other exotic diseases requiring complete isolation.

Microbiological Diagnostic Unit.

Enteric Organisms.

(*a*) *Typhoid.*

The pattern of typhoid in most developed countries now shows that imported cases make the largest contribution to total numbers. In 1976 this was represented here by two instances. In one a 12-year-old girl who had been ill in Indonesia was found, in Fairfield Hospital, to be excreting Sal. typhi type 53—a common phage type in South East Asia. In the other a 46-year-old woman was admitted to hospital with fever, headache and diarrhoea nearly three weeks after her arrival in Australia on a flight BA 834 which had come from Britain via the Middle East and Delhi in late October. From her faeces and blood cultures Sal. typhi 0 was isolated. As there was no suggestion that she could have acquired the disease from home contacts in Britain, the Health Department sought other passengers on that flight and three more cases occurred in Victoria, three in other States and two in New Zealand—all type 0.

Several patients—including the index case—had suffered diarrhoea initially on arrival and Shig. boydii 10 was isolated from 2 passengers and Sal. typhimurium and Sal. sofia from two others.

The relative rarity of spread of typhoid from carriers was shown by the case of a 14-year-old boy who contacted typhoid phage type 46 after a visit to relatives in Yallourn. The boy's uncle was found to be still excreting following an attack thirty years previously near Kalgoorlie. Likewise a 55-year-old female patient at Mont Park was only found to be excreting Sal. typhi (type E_1) when an outbreak of Sh. flexneri dysentery stimulated screening of many patients.

One hundred and nineteen cultures were phage typed, 15 from Victoria, 32 from interstate and the rest from New Guinea, Tonga and the Philippines.

(*b*) *Paratyphoid.*

The continuing popularity of travel in Asia resulted in the importation of four cases due to Sal. paratyphi A into Victoria. A culture from another was sent from New South Wales. In addition, a bacteriologist working in the Unit became infected while serotyping a culture received at the turn of the year. This analysis was assisted by phage-typing carried out by Professor Anderson, Colindale, England.

Only one case of paratyphoid due to Sal. paratyphi B was imported after recent travel abroad —this was phage type Beccles and was acquired in Italy. The source of a local infection by phage type Dundee was never elucidated despite a fairly vigorous investigation. The only case, a young man from Werribee, showed signs of infection while holidaying near the Murray River. The third case—phage type 3a 1 var 1—was discovered when an erstwhile migrant was admitted to a public hospital with septicaemia complicating a colonic fistula following abdominal surgery. Active surveillance failed to show evidence of spread of infection.

Sewerage from Victoria yielded phage type Tauton and that from South Australia 3a var 4—indicating sources in the communities. A culture was received from the Philippines for typing, also.

(*c*) *Other Salmonellas.*

In addition to those enteric fever serotypes mentioned above the enteric laboratory handled 578 cultures of salmonellas isolated from humans and 187 strains from non-human sources from Victoria as well as seven from interstate.

These represented a wide range of serotypes including 6 each of Sal. agona and Sal. bredeney but Sal. typhimurium comprised 54·6% of the strains, Sal. bovis morbificans 15·3%, and Sal. newport 6·2%.

Egg-pulp—prior to pasteurization—provided the greatest source of strains from non-human sources. Because chickens and eggs have been the original source of many outbreaks in man this surveillance remains of importance.

Early in 1977 there was a substantial prevalence of sporadic salmonellosis in the community with 33 strains of Sal. bovis morbificans being serotyped in March and 12 in April. In April also, an outbreak of Sal. potsdam infection in a major city hospital was investigated. Isolations were made from 10 people including two nurses, one laboratory technologist and patients in 4 different wards and an out-patient. The source and method of spread were never traced. Salmonellas in hospitals represent a great potential danger as a wide spread can occur subclinically before they are detected and severe infections can occur in debilitated patients.

Groups of Indo-Asian immigrants who were screened for intestinal pathogens yielded a range of salmonellas including Sal. weltevreden and Sal. brunei. A feature was that these isolates were sensitive to antibiotics.

The phage-typing of Sal. typhimurium isolates continued at the reduced level which the Unit has, reluctantly, had to accept as inevitable with the resources available. 325 strains from Victoria and 176 from interstate were typed.

(*d*) *Shigellas.*

A total of 330 strains were identified in the Unit. Of these, 172 were Sh. sonnei from South Australia sent for colicine typing and 13 came from interstate. As usual Sh. sonnei comprised over 60% of the Victorian strains.

An outbreak of Sh. sonnei occurred at the Presbyterian Babies Home early in the year. Both children and nurses were affected. The strains were resistant to sulphonamide and were colicine type 0. A little later in April an outbreak occurred at Mont Park which was also caused by type 0 Sh. sonnei ; but in November there was a further outbreak, this time caused by Sh. flexneri 3A.

The Indo-Asian immigrants carried a wide variety of shigellas including Sh. boydii 11 and Sh. flexneri 3c. A feature of these shigellas was their resistance to antibiotics. Resistance was frequently multiple and most were resistant to chloramphenicol.

Colicine typing of Sh. sonnei revealed the customary predominance of type 0 but type 11 made up nearly 17% of the South Australian strains. A system of biotyping strains was introduced and a number of strains were also sent to the Pasteur Institute for phage typing. This latter procedure showed that the shigellas responsible for the Babies Home and the Mont Park outbreaks were different.

(*e*) *Enteropathogenic Escherichia coli.*

Of the cultures received for definitive serotyping 37 were found to belong to types associated with intestinal disease. Eleven different serotypes were represented and no evidence of outbreaks was received.

Gonorrhoea.

The number of genital specimens received fell in 1976. This was partly owing to the termination of activities by the Women's Health Collective but also due to a decline in specimens from the Government Clinic. Only 8,688 cultures were received from this source. The new system of plates being inoculated directly continued to work well. During the year the presence of gonococci solidly resistant to penicillin by reason of the production of a beta-lactamase was reported from South-East Asia and Liverpool, with importations to U.S.A. Importations to Australia occurred and two strains forwarded to the Unit from private laboratories for testing were found to produce beta-lactamase. This has made isolation and monitoring of gonoccoci from male patients imperative as it seems that only by diligent tracing of patients and contacts and treatment with appropriate drugs will these resistant strains continue to be rare.

Testing of the minimal inhibitory concentrations of penicillin, tetracycline and spectinomycin on all strains of Neisseria gonorrhoeae continued and much the same pattern of resistance was found as during the previous year. It seems that strains isolated in South Australia seem to be more sensitive to penicillin. These findings will need to be investigated.

Candidiasis continued to be frequently demonstrated in association with vaginitis, but trichomoniasis was frequently diagnosed.

Water Bacteriology.

The number of water samples examined is continuing to decline. Rural water supplies monitored showed a patchy quality. Some areas with contaminated catchments were consistently bad and the great variation in tank waters also indicated the need for careful maintenance. Public swimming pools were generally well kept.

Parasitology.

Examination of the substantial groups of Indo-Asian refugees for intestinal parasites provided both a considerable workload and much of interest. In general these immigrants did not carry a heavy load of parasites but a wide range of eggs and cysts was detected including Entamoeba histolytica, Entamoeba hartmanni, and Opisthorchis spp. not often seen in Melbourne.

The Ministry of Water Resources funded a study to gauge the prevalence of taeniasis in Melbourne as part of their investigations into the re-use of water. There were delays in starting the study associated with training staff and with getting the co-operation of hospitals.

It had been proposed to screen obstetric patients at public hospitals which received many migrants as a method of detecting groups which from previous data might be expected to have tapeworms. A multi-lingual questionnaire was prepared and faecal specimens and perianal swabs were examined. Even by the end of 1976 it was evident that there was a high prevalence of taeniasis among patients of Lebanese origin—amounting to 25%–30% even on the somewhat superficial screening adopted. Whenever proglottids were available for examination they were identified as Taenia saginata.

In association with this project a B.Sc. (Hons.) student began an investigation into the practicability of a serological test for taeniasis as a possible aid in screening large numbers of patients. Both passive haemagglutination and enzyme linked immune sorbent assay (ELISA) techniques were tried with promising results but the need for further investigation was also delineated.

Food.

Some forty-four episodes of "food poisoning" were reported to the Unit covering a wide range of circumstances. Three outbreaks were associated with Bacillus cereus. All of these had the familiar pattern of cooked rice, contaminated with this organism, being left at ambient temperatures too long.

A case of diarrhoea after eating a commercial meat roll was shown to be probably due to Clostridium perfringens and stimulated examination of a number of rolls and a visit to the factory. The rolls were found to contain substantial numbers of clostridia and the factory was advised concerning their process.

Two incidents involved salamis and similar smallgoods. In one, diners complained of illness after visiting a restaurant and salmonellas were isolated from raw materials at the smallgoods factory supplying the restaurant. More significantly, an outbreak of salmonellosis in Western Australia was traced to smallgoods produced at a Victorian factory. The factory was visited and samples collected, both from employees and of smallgoods, without finding salmonellas. When the seized material was returned from Western Australia it contained two batches. From 26 samples of one no salmonellas were isolated, but 16 of 30 samples of the other yielded 19 strains of 4 serotypes of salmonellas. The two batches also differed in consistency and water activity, indicating that a failure in the normal fermentation process had occurred.

Among other incidents of food-poisoning investigated salmonellas were isolated from whiting and oysters, and Clostridium perfringens from paté.

A number of small surveys of dried fruit, dried fish, milk and imported frogs' legs were undertaken. Bacteriological investigations led to inspection of premises on two further occasions and following one of these a baker's shop was successfully prosecuted. Staphylococcal lesions occurring among a family running a dairy farm led to an investigation, but strains isolated from both family and herd were not of the same phage type.

General.

A feature of the year was the increased participation by staff in field work. A bacteriologist accompanied a District Health Officer collecting nasopharyngeal specimens at a caravan park where a case of meningococcal meningitis occurred, and staff assisted collecting specimens from Indo-Asian immigrant groups. In addition members gave evidence in a case relating to complaints about a bottle of milk.

Dr. Maureen Hutchinson, previously a lecturer in Food Microbiology in Belfast, joined the Unit on a studentship offered by the Department of Microbiology. She assisted in food examinations and accompanied District Health Inspectors on visits to premises as well as embarking on a study of the changing bacterial flora of local oysters during storage.

Mr. James Pennington was transferred to head the new Departmental Media Production Laboratory serving the needs of the Department of Microbiology and the Royal Melbourne Hospital as well as the Diagnostic Unit. This new arrangement promises improved quality as well as economies of scale. He was replaced as Senior Bacteriologist by Dr. Margaret Peel.

The work of an M.Sc. student in the field of genital chlamydias continued with improved success in isolating these difficult organisms. Evidence of the importance of chlamydia in genital infections is increasing.

Dr. Peel took on a project to assess the efficacy of ultraviolet " sterilizing " cabinets for use in hairdressing establishments. Progress was delayed by difficulties in devising a satisfactory experimental model but promising results were obtained later using spore suspensions as the test organisms.

Following informal suggestions from the National Health and Medical Research Council, sera are being raised against various serotypes of Neisseria meningitidis and steps are being taken to provide a typing service.

The Assistant Director attended the annual scientific meeting of the Australian Society for Microbiology and lectured at Mayfield Centre and at the course for food handlers conducted by the Australian Institute of Food Science and Technology. In addition, a further meeting at the Water Research Centre, Medmenham, England, was attended and this visit was combined with visits to the British Department of Health and Social Security and to Dr. Dane, Middlesex Hospital, to discuss vaccine policies, and to Colindale to discuss food microbiology.

The Unit benefited greatly by the presence of Professor A. S. Benenson, erstwhile Director of the Cholera Research Laboratory, Dacca, on sabbatical leave from the University of Kentucky in the Department of Microbiology. During this visit he stimulated investigations into the efficacy of diphtheria vaccine which are continuing.

The first half of 1977 has been marked by two outbreaks of salmonella infection of major import—a sharp outbreak of typhoid and a prolonged investigation relating to salmonella contamination of powdered infant milk formula. These, added to the normal work, have placed an unprecedented load upon the Unit despite the Department helping with temporary assistance and also the adventitious presence of Dr. Hutchinson.

Annual Examinations.

A Comparison of Numbers for the Calendar Years 1975 *and* 1976.

Examinations.	1975.	1976.
1. *Upper Respiratory Tract Infections :—*		
(*a*) Diphtheria		
(i) Cultural examinations	879	895
(ii) Isolations and identifications	4	1
(*b*) Haemolytic Streptococci		
(i) Cultural examinations	879	895
(ii) Groupings	109	73
(iii) Anti-streptolysin titre tests	130	104
2. *Enteric Infections* (*Salmonella and Shigella*) *:—*		
(i) Cultural examinations	1,817	2,095
(ii) Identifications	1,466	1,364
(iii) Bacteriophage typing (S. typhi, S. paratyphi B, S. typhimurium)	1,341	636
(iv) Widal agglutination	831	239
3. *Serological Investigations :—*		
(*a*) Brucella	823	502
(*b*) Glandular Fever	160	147
(*c*) Leptospirosis	121	80
(*d*) Typhus Fever	42	38
(*e*) Rubella H.I.	1,506	1,425
(*f*) Others	..	1
4. *General Bacteriological Examinations :—*		
(i) Cultures	4,608	3,904
(ii) Drug sensitivities	1,422	2,778
5. *N. gonorrhoeae and related infections :—*		
(*a*) N. gonorrhoeae		
(i) Smears	2,605	1,357
(ii) Cultural examinations	15,291	12,223
(*b*) Trichomonas vaginalis		
(i) Culture	69	150
6. *Medical Mycology*	197	120
7. *Water examinations*	659	613
8. *Parasitological examinations*	946	1,035
Totals	35,905	30,675

Health Laboratory.

General.

The normally broad range of materials submitted to the Health Laboratory became even wider in scope during the past year, involving the development of further sophisticated techniques.

Laboratory staff have been involved in numerous inspections, prosecution cases and the customary large number of technical inquiries directed to the Division.

The Senior Chemist and Food Technologist, Mr. Stanhope, lectured to groups at the Royal Melbourne Institute of Technology, the Food Technology Association, the Swinburne College of Technology, and the Australian Development Assistance Agency (ADAA). Following the latter address two overseas students from the ADAA course spent two weeks in the Laboratory. Mr. Stanhope has also acted on the Section 18 Committee for the forthcoming ANZAAS Conference in Melbourne, the Standards Association Committee on Plastics for Food Contact and other committees. He represented the Department at the Annual Convention of the Australian Institute of Food Science and Technology in Queensland, during May, 1977, and was also elected a fellow of this body during the year.

Mr. E. Sasso, Technical Officer, was granted conversion of his diploma to degree status at the Royal Melbourne Institute of Technology, partly as a result of work carried out at the Health Laboratory on nitrate in water.

The largest piece of equipment purchased this year was an autoclave, which will considerably increase sterilisation capacity. A number of other items were acquired to supplement existing apparatus.

The Laboratory has participated in the latest total diet study being conducted by the National Health and Medical Research Council. This work has entailed determination of pesticides, heavy metals and iodine in milk, icecream and water.

Meat and Meat Products.

The proportion of samples under this heading not complying with legal requirements continues at about the same level (Table I) but it is noteworthy that adulteration of fresh meat, other than chopped meat, with preservative was not detected during the year, although a smaller number was submitted in this category. The highest proportion of sulphur dioxide found in chopped meat was 11·4 grains per pound, and in sausages 10 grains per pound.

TABLE I.—SUMMARY FOR MEAT PRODUCTS.

Type.	Number Examined.	Number not Complying.	Percentage not Complying in—		
			1976–77.	1975–76.	1974–75.
Meat—					
Fresh	146	0	0	2	1
Chopped	243	22	9	11	11
Corned	15	3	20	0	0
Manufactured	152	6	4	2	3
Sausages and Sausage Meat	256	22	8	11	9
Tripe	21	1	5	17	25
Meat Pies	28	5	18	24	20
Total Meat Product Samples ..	861	59	6·9	8·2	7·8

The lowest meat contents recorded in sausage meat—58%—and meat pies—19%—were substantially below the statutory minima of 75% and 25% respectively.

A product sold under the name of " chicken burgers " contained no chicken meat whatsoever, but consisted of beef.

A sample of dripping was found to be rancid.

An investigation into the effect of heating on the sulphur dioxide content of sausage meat revealed an increase in the proportion present, due to evaporation of moisture, although the actual amount of preservative decreased.

The incorporation of antibiotics into certain poultry and swine feeds is permitted under the Stock Foods Act, and microbiological methods are being developed for detection of residues. A preliminary survey of poultry muscle tissue, including samples of all known brands on the market, was completed during the year. No evidence of inhibitory substances was found in the chickens examined and similar results were obtained with several pork chops tested.

Dairy Products.

Most dairy products complied compositionally with the regulations. The situation is summarised in Table II, but does not include dairy products examined for contaminating matter (See Table III), antibiotic residues or microbiological status.

One cheese sample was deficient in fat and another was not labelled with the appropriate type name.

Work has continued on the iodine content of milk and a sample of goat milk was found to contain the somewhat high level of 1,400 micrograms per litre of this element.

TABLE II.—SUMMARY FOR DAIRY PRODUCTS.

Product.	Total 1976-77.	Number Not Complying in 1976-77.	Total 1975–76.	Number Not Complying in 1975–76.
Milk—				
Fresh	55	0	150	3
Malted	0	0	1	0
Flavoured	2	0	0	0
Powered	2	0	1	0
Powdered Skim	2	0	0	0
Butter	15	0	24	0
Cream—				
Fresh	1	0	2	0
Thickened	16	0	10	0
Sour	0	0	1	0
Reduced	1	0	0	0
Cheese	22	2	40	2
Cheese Spread	1	0	0	0
Icecream	13	0	32	0
Yoghurt	8	0	7	0
Total	138	2	268	5

A survey of penicillin residues in milk was commenced early in 1977. Penicillin is used in the treatment of dairy cattle but its presence in milk is specifically prohibited by the Food and Drug Standards Regulations. A sensitive microbiological procedure is being used, capable of detecting levels down to 0·002 microgram per ml. Three samples out of a total of 113 contained penicillin up to a maximum of 0·003 microgram per ml.

Various dairy products were examined for compliance with the microbiological standards in the Food and Drug Standards Regulations. Most of the samples proved satisfactory, but there was an indication that manufacturing practices in some plants involved could be improved, and visits to selected premises have been undertaken by the Food Microbiologist and a Staff Chemist.

Bread and Other Cereal Products.

Twenty-four bread samples were analysed and six did not meet legal requirements. No milk solids were detected in a loaf sold as milk bread, and two others contained less than the statutory 4%. The fibre content of three other breads, alleged to be wholemeal, was found to be less than the mandatory 1·8% indicating that the required proportion of wholemeal flour had not been used.

Interest in the amount of fibre in foods has increased recently. Following a complaint that a breakfast food labelled " 100% bran " did not consist entirely of bran, several products on the market were analysed and found to contain between 5·6% and 7·5% of fibre, compared with a value for pure bran of about 10%. Some manufacturers were required to alter labelling following this investigation.

Fruit and Vegetable Products.

An extensive investigation was carried out on the composition of orange juice and orange juice drinks on the market. Parameters measured included vitamin C, amino acids, phosphorus, calcium and polyphenolics. Considerable variation was found in the proportion of various components in fruit juice. Vitamin C, which is allowed to be added, ranged from 10·5 to 23·3 mg./fluid ounce, compared with the statutory minimum of 11·5 mg./fluid ounce. Phosphorus (calculated as phosphorus pentoxide) and calcium contents showed ranges of 13·7–32·0 and 6·7–11·4 mg./100 ml., respectively.

Two vegetable products, coleslaw and bean shoots, contained preservative, and samples of potato salad had very high plate counts—up to 1,000,000/g—indicative of poor hygiene.

Contamination of Food.

The number of cases of contamination reported to the Health Laboratory increased markedly last year (Table III). There is an indication of increased infestation by insects and rodents, illustrating the importance of care in food handling and storage.

The occurrence of lacquer in a canned soft drink, which imparted a most objectionable flavour to the beverage, was apparently caused by excessive application of the protective coating normally applied to the inside of the container prior to filling.

Many of the substances listed are highly objectionable from a health viewpoint, since they could render the food hazardous to the consumer.

A large stock of frozen pies and sausage rolls was contaminated with ammonia due to refrigerant leakage in a frozen food warehouse. A Staff Chemist inspected the plant and made appropriate recommendations.

Contamination of milk with traces of alcohol was found to originate from a leakage in refrigeration equipment at the dairy concerned.

TABLE III.—LIST OF EXTRANEOUS SUBSTANCES FOUND IN FOOD.

Food.	Foreign Material.
Bean mix	Small stone
Beer (2 samples)	Mould and vegetable matter
Beer	Yeast and bacteria cells
Bread (2 samples)	Mould
Bread	" Ropiness " due to bacterial action
Cheese (processed)	Insect fragments
Chocolate	Insect frass
Confectionery	Rodent faeces and wood splinters
Confectionery	Wood particles
Dates	Clay (small pieces)
Dates	Insect frass and mould
Dates (2 samples)	Insect frass
Dim Sim	Portion of steel bolt
Fish (smoked—large consignment)	Mould
Fish Fillets (frozen)	Nematodes (fish parasites)
Jam (apricot)	Rodent faeces
Jam (strawberry)	Insect (cricket)
Milk	Alcohol (trace)
Milk	Bread
Milk (2 samples)	Mould
Pasty	Cigar butt
Peaches (canned)	Insect (cricket)
Pickles	Insect (bee)
Pies and sausage rolls (frozen)	Ammonia
Sandwich	Insect fragments
Spaghetti (canned)	Spider
Soft drink (canned)	Lacquer
Soft drink (3 samples)	Mould
Soup (canned, vegetable)	Insect larva

Pesticides.

Only 63% of the fruit and vegetables tested contained detectable organochlorine pesticides, compared with 84% in the previous year. All results were below statutory limits.

The National Health and Medical Research Council's recommended standard for pesticide residues was adopted in September 1976. This standard places stringent limits on residues in all types of food and in potable water.

A " cockroach bait " submitted to the Laboratory was devoid of pesticide, consisting merely of crushed grain.

A number of blood samples were analysed for the Industrial Hygiene Division.

TABLE IV.—SUMMARY OF PESTICIDE RESULTS.

Nature of Sample.	Number.	Analyses Carried out.*	No. of Samples in which Pesticides Were Detected.
Apples	20	19 for OC	16
		20 for OP	0
		19 for Arsenic	0
		19 for Carbaryl	0
Apricots	1	1 for OC	0
		1 for OP	0
Bait (for Cockroaches)	1	1 for OC	0
		1 for OP	0
		1 for Arsenic	0
Beans	12	12 for OC	10
		10 for OP	0
		10 for Carbaryl	0
Beans (Butter)	1	1 for OC	0
Beans (Lima)	1	1 for OC	1
Blood	27	27 for OC	23
		1 for Pyrethrins	0
Bran	5	5 for OC	4
		5 for OP	5
Cabbage	10	10 for OC	3
		10 for OP	0
		10 for Carbaryl	0
Capsicum	5	5 for OC	5
		5 for OP	0
		5 for Carbaryl	0
Carrots	5	5 for OC	4
		5 for OP	0
		5 for Carbaryl	0
Cauliflower	11	11 for OC	0
		11 for OP	0
		11 for Carbaryl	0
Celery	6	5 for OC	3
		5 for OP	1
		5 for Carbaryl	0
		6 for Copper	1
		1 for Dithiocarbamates	0
Cucumber	5	5 for OC	5
		5 for OP	0
		5 for Carbaryl	0
Eel	1	1 for OP	0
Icecream**	2	2 for OC	0
Lettuce	10	10 for OC	5
		10 for OP	1
		10 for Carbaryl	0
Milk**	2	2 for OC	0
Plums	1	1 for OP	0
Strawberries	19	19 for OC	8
		19 for OP	2
		19 for Carbaryl	0
Tomatoes	20	20 for OC	18
		16 for OP	0
		20 for Carbaryl	0
Water**	4	4 for OC	3
Wine	6	6 for OC	0
	175	443	

* Legend: OC—Organochlorine Compounds; OP—Organophosphorus Compounds. ** Samples for N.H. and M.R.C. total diet study.

Table V.—Mercury, Cadmium, Arsenic, Zinc, Copper and Lead.

Sample.	Number Analysed.	Range (p.p.m. except where otherwise indicated).
Mercury—		
Cat Food	1	0·1
Fish (Canned)	5	1·0–1·2
Fish (species unknown)	54	0·1–1·8
Flake	210	N.D.–2·8
Hake	15	0·1–1·4
Scallops	1	N.D.
Smoked eel	1	0·1
Whiting	1	0·1
Trade Waste	1	0·001
Water*	6	N.D.
Milk*	2	N.D.
Icecream*	2	N.D.
Cadmium—		
Chicken Paté	1	N.D.
Confectionery	4	N.D.
Fish (Canned)	1	N.D.
Ice Confections	2	N.D.
Mussels	1	1·0
Rotisserie Rod Coating	1	N.D.
Scallops	4	1·6–5·7
Water	12	N.D.–0·0005
Water*	6	N.D.
Milk*	2	N.D.
Icecream*	2	N.D.
Arsenic—		
Chicken Paté	1	N.D.
Confectionery	4	N.D.
Copper Alloy	1	5
Fish (Pilchards and Squid)	4	0·5–2·0
Mussels	4	0·9–1·3
Trade Waste	1	0·03
Zinc—		
Apricots (Canned)	1	2·1
Chicken Paté	1	27
Coleslaw	1	0·5
Confectionery	14	N.D.–120
Copper Alloy (Pellets)	1	2·93%
Cream	1	2·3
Fish (Canned)	2	12–17
Ice Confections	2	N.D.
Mushrooms (Canned)	1	1·0
Oil (Edible)	1	1·0
Scallops	3	63–83
Soup (French Onion)	3	0·3–640
Soup (held in galvanised iron container)	1	300
Soup Ingredients	20	N.D.–10
Trade Waste	7	0·1–37,500
Water	1	0·05
Wine	1	1·1
Water*	6	N.D.–0·13
Milk*	2	1·2–1·7
Icecream*	2	2·0
Copper—		
Apricots (Canned)	1	1·0
Chicken Paté	1	3·0
Coleslaw	1	0·5
Confectionery	4	N.D.
Copper Alloy (pellets)	1	93·3%
Cream	1	0·2
Fish (Canned)		N.D.–2·1
Hawthorn Berries	1	2·5
Ice Confections	24	N.D.–21
Mushrooms (Canned)	1	3·9
Silver Beet	1	0·5
Soup (French Onion)	1	0·3
Trade Waste	7	N.D.–3·1
Water	2	1·0–1·3
Lead—		
Apricots (Canned)	1	0·5
Chicken Paté	1	N.D.
Confectionery	4	N.D.
Copper Alloy (Pellets)	1	650
Cream	1	N.D.
Fish (Canned)	2	N.D.–2·4
Hair Dye	1	0·33%
Mussels	22	0·5–5·3
Pencils	59	
—paint coating		N.D.–18·8%
—central core		N.D.–1·6%
Pendant (Metal)	1	70%
Plastic Toys	4	N.D.
Potato Chipper	2	1·3%–1·4%
Rotisserie Rod Coating	1	N.D.
Tin (from Tinning vat)	2	0·06%–1·04%
Trade Waste	8	N.D.–0·4
Water*	6	N.D.
Milk*	2	N.D.
Icecream*	2	N.D.

* Samples for N.H. and M.R.C. total diet study. N.D., not detected.

Metals.

A great deal of work on the heavy metal content of foods and other materials has been carried out (Table V).

An outbreak of illness, including almost immediate vomiting, following consumption of French onion soup was traced to zinc from a galvanised drum used in a restaurant kitchen. The zinc content of the soup was found to be 650 parts per million, and subsequent investigation by laboratory staff established that hot soup of this type would acquire about 300 p.p.m. zinc from the galvanising when placed in contact for about one hour.

This metal again came under notice when a group of schoolgirls became sick after consuming imported sweets with a zinc content up to 120 p.p.m. Commonwealth authorities were alerted and the product was removed from sale.

Following an outbreak of copper poisoning from ice blocks during the 1975–76 year, the permissible level was reduced from 30 p.p.m. to 5 p.p.m. on the recommendation of the Food Standards Committee. A few samples of the same brand contained amounts up to 21 p.p.m., probably old stock undetected during the previous incident, and the trouble now seems to have cleared up.

Two further surveys of mercury in flake from fish shops were undertaken, involving about 200 samples. The mercury content has been standardised by regulation to an 80% moisture level, since fish loses weight by evaporation during cooking.

Results for the four surveys are summarised in Table VI.

TABLE VI.

Date of Survey.	*Average Mercury (80% moisture basis) Parts per Million.
August 1973	0·66
January 1975	0·68
June–July 1976	0·47
November–December 1976	0·57

* Without batter.

Additional information on the mercury content of fish other than flake was obtained during the year.

Lead was determined in a variety of materials. Its presence in a potato chipper was traced back to the manufacturer, where 1% of lead was found in the tinning vat. It was also found in the seams of tins proposed for fruit storage, the outside paint (18%) and core (1·6%) of pencils, a preparation sold for the darkening of grey hair (0·3%), and a metal pendant (70%).

Aflatoxin.

Work has recommenced on aflatoxin in peanut products, following poor quality in the 1977 Queensland crop. Normally, Australian peanuts are vitually free of aflatoxin, a poisonous substance produced by mould, but wet conditions this year have been favourable to fungal growth. The Food Standards Committee has recommended a maximum allowable concentration of 15 micrograms per kilogram (parts per thousand million) in peanut products, a level requiring sophisticated techniques for detection.

Other Foods.

A bottle of whisky was adulterated with added water, and a sample of smoked salmon contained a non-prescribed artificial colouring.

A glass-like substance in canned salmon proved to be struvite, a harmless crystalline material which occasionally forms in fish products.

One of the more unusual foods submitted consisted of frogs' legs.

Waters, Effluents and Trade Wastes.

740 samples were examined in this category. Of these 117 were waters used in renal dialysis units. The remainder came from a variety of sources, including sewage plants, industrial premises and fluoridation installations.

There has been a steady increase in the number of statutory check samples received from water supply authorities.

Bore water from South-west Victoria was found to contain 110 p.p.m. nitrate, considerably in excess of the maximum of 45 p.p.m. recommended by the World Health Organization for potable water.

Miscellaneous.

Samples of talcum powder were tested following reports from members of the public of skin irritation. It was discovered that the perfume content was about four times normal, and the offending batch was removed from sale by the retailer, who had received similar complaints.

A number of products presented potential hazards, in particular babies' teething rings and gum soothers which were hollow and filled with impure water. One soother also contained mould. Colouring was removed from " anodised " aluminium beakers by milk and alcoholic beverages, and the utensils were withdrawn from the market. Plastic cigars which caught fire when exposed to a flame were considered dangerous as toys.

Polishers and toilet soaps used in government buildings were tested from the Public Works Department.

The compulsory statement " for external use only " did not appear on a sample of eucalyptus oil which contravened the requirements of the British Pharmacopoeia.

FOOD STANDARDS COMMITTEE.

The Food Standards Committee held five meetings during the past year. As in previous years the major discussions concerned the adoption of, and commenting on, draft standards recommended by the National Health and Medical Research Council for uniform adoption by the States. The Committee also discussed several matters which had arisen in Victoria, and in several cases because of the undesirability of taking unilateral action, recommendations were made direct to the National Health and Medical Research Council.

Numerous amendments were made to the Food and Drug Standards Regulations 1966, and four sets of Statutory Rules were approved by the Governor-in-Council in this regard. The most significant amendments related to the adoption of a new standard for canned infant foods, (the first State to set down a legal standard for such products), the adoption of stringent limits for pesticide residues in food and water, and severe restrictions on residues of vinyl chloride in food from containers.

At present the general labelling provisions of the Regulations are being considerably expanded, and new standards for tomato products, cheese, fruit drinks and extractable lead and cadmium in ceramic utensils are in the course of promulgation. A consolidation of the Regulations is also being undertaken, and this will greatly facilitate their use.

During the year, Mr. Keith Smith, a member of the Committee since February 1976, submitted his resignation and appreciation is recorded of his services on the Committee.

PROPRIETARY MEDICINES ADVISORY COMMITTEE.

382 applications to have preparations registered as Proprietary Medicines in accordance with Division 3 of the *Health Act* 1958, were received by the Department in the past twelve months. This is a slight increase on last year's figure (1975–76—368 applications).

Since the inception of registration 20,964 applications have been received, of which 17,462 have been recommended for registration to the Chief Health Officer by the Advisory Committee.

During the year the Committee met 19 times—10 to consider new applications, 1 to review registrations of more than 10 years standing and 8 to deal with a combined agenda of both new and review applications.

One supplementary register was published during the year containing 355 new registrations, 222 deletions and 184 amendments to existing registrations.

During the year, only one company exercised the right of appeal under Section 263 (4) of the *Health Act* 1958, and appeared in support of the particular application.

POISONS DIVISION.

Staffing.

Staff changes during the year were the transfers of Mr. J. R. Jewell from the Poisons Information Centre at the Royal Children's Hospital to the position of Scientific Officer at this Division and of Mr. D. B. Newgreen from the position of Poisons Control Inspector to Director of Drug Information Services at the Mental Health Authority.

The staff workload has increased during the year due to greater numbers of applications for licences and permits being received, more inspections pursuant to the Australian Code of Good Manufacturing Practice, and a need to pay increasing attention to the accountability and security of drugs of abuse and addiction.

Committee and Sub-Committee Meetings.

The Poisons Advisory Committee met five times during the year, and three meetings of the Scheduling Sub-Committee and one meeting of the Labelling and Containers Sub-Committee were also held.

Numerous meetings also were arranged with various trade, professional and business organisations and a number of meetings and seminars were attended by staff to maintain communication between these bodies and the Department.

Legislation.

The following legislation was introduced during the year :

Special Poisons (*Ovulatory Stimulant*) *Regulations* 1976
Special Poisons (*Ovulatory Stimulant*) *Regulations* 1976 (No. 2)
Special Poisons (*Ovulatory Stimulant*) *Regulations* 1977

These Regulations provided for the insertion of Swan Hill District Hospital, Central Gippsland Hospital, The Bendigo and Northern District Base Hospital, William Angliss Hospital, Wimmera Hospital, The Geelong Hospital and the Latrobe Valley Hospital to the list of hospitals whose chief pharmacists are authorised to hold ovulatory stimulants on behalf of medical practitioners holding warrants from the Chief Health Officer to possess and to use these drugs.

Special Poisons (*Cyanide*) *Regulations* 1977.

These Regulations modified the interpretation of Cyanide in the Principal Regulations, viz. Special Poisons (Cyanide) Regulations 1965.

Special Poisons (*Prohibition*) (*Amendment*) *Regulations* 1977.

These Regulations provided for the insertion of TRIS (2,3-Dibromopropyl) Phosphate to the list of items contained in the Principal Regulations, being the Special Poisons (Prohibition) Regulations 1968. The manufacture, sale, distribution and use of such items are prohibited unless approved by the Chief Health Officer in the terms of the *Poisons Act* 1962 for experimental or research purposes in an approved university or research institution.

Poisons (*Drugs of Addiction*) *Act* 1976.

This Act provides for the amendment of the *Poisons Act* 1962 with respect to regulatory power, the creation of a position for the Chief Commissioner of Police or his nominee on the Poisons Advisory Committee, the insertion of a Schedule Eleven which details the quantity of certain drugs for the purpose of prima facie evidence of trafficking, and amending the interpretation of Indian Hemp and penalties liable under the *Poisons Act* 1962.

Although the *Poisons (Drugs of Addiction) Act* 1976 has passed through both Houses of Parliament, its date of coming into operation has yet to be proclaimed.

Proclamations.

Two proclamations were approved by the Governor-in-Council which concerned thirty-seven additions and alterations to the Schedules of the *Poisons Act* 1962.

Co-ordination of Activities between States.

(*a*) *Poisons Schedule Standing Committee.*

Mr. F. R. Ahern, Poisons Control Inspector, attended four meetings of this Committee with representatives of other States.

The Standing Committee continued its role of offering uniform advice to the States in respect of scheduling of poisons and their labelling and packaging.

(*b*) *Control of Therapeutic Goods.*

Mr. A. T. Gardner, Deputy Secretary of the Department of Health and Mr. F. R. Ahern, Poisons Control Inspector, attended two meetings of the National Therapeutic Goods Committee which is established under the Commonwealth Therapeutic Goods Act to exercise control and co-ordinate legislation throughout the Commonwealth and State Departments of Health, over all therapeutic goods.

Mr. F. G. Jameson, Poisons Control Inspector, has acted as Commonwealth/State " Co-ordinator " of joint inspections with Officers of the Commonwealth Health Department throughout the year. To ensure compliance with the Code, 82 joint Commonwealth/State inspections were made and follow-up procedures have been undertaken where appropriate.

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(*c*) *Monitoring of Drug Transactions—Drugs of Addiction.*

The Division continued to monitor the movements of drugs of addiction and to provide information to the Commonwealth Health Department on stock balances and weekly adjustments by all licensed wholesalers and manufacturers of drugs of addiction.

All Poisons Control Inspectors continued to survey movement returns of drugs of addiction and this action resulted in a number of permits being issued for patients being treated with drugs of addiction on a long-term basis, and also the detection of some instances of illicit drug use.

Consumption and usage of particular drugs such as methadone, methaqualone and pentazocine were also studied and appropriate action was taken to maintain the usage of drugs of dependence at a minimum.

Health Education Activities.

The Senior Poisons Control Officer and all Poisons Control Inspectors continued to participate in the national drug education programme as members of the speakers panel of the Health Education Centre. These Officers also participated in symposia and gave a number of lectures on poisons legislation and other topics associated with drugs, poisons and therapeutic goods.

On request, Officers were also made available to lecture students at Melbourne University, The Victorian College of Pharmacy, the William Angliss Food Trades School, Oakleigh Technical School and various State Colleges of Education.

Professional and Technical Advice and Assistance.

Officers of the Division continued to provide advice to industry, the professions and the public on all aspects of the manufacture, packaging, labelling, containers and regulations concerning the distribution and use of poisons.

Mr. F. R. Ahern, Poisons Control Inspector, represented the Division at 12 meetings of the Stock Medicines Board of Victoria and 7 meetings of the Contraceptives Registration Committee of Victoria.

The Division also provided inspectorial support and advice to the Victorian Proprietary Medicines Advisory Committee and the Special Accommodation Houses Section of the General Health Branch.

Drug Recalls.

Sixteen recalls of sub-standard therapeutic goods were instituted during the year. As for the previous year this represents a decline on previous figures and would imply that the considerable increase in activity of the Division in respect of the Australian Code of Good Manufacturing Practice is becoming apparent.

Recalls were necessary for the following reasons—particulate matter ; contaminated contents ; failure to meet required standards of potency, or faulty or incorrect labelling or packaging.

Appropriate follow-up investigations were made and recommendations formulated in an attempt to prevent a recurrence of the incidents which had necessitated the recalls.

Permits for Drugs of Addiction.

The number of permits issued to medical practitioners by the Chief Health Officer to prescribe Schedule 8 amphetamine drugs other than drugs of addiction for periods in excess of 8 weeks showed a marked increase on the previous year.

A total of 3,087 permits for 2,128 patients were issued compared with 1,058 permits for 1975–76 and 783 permits for 1974–75. Of this number, permits to prescribe drugs of addiction for long-term treatment of medical conditions other than drugs of addiction again increased from 908 permits for 847 patients in 1975–76 to 988 permits for 885 patients. In 1974–75 625 permits were issued for 563 patients. Permits to prescribe Schedule Eight amphetamine drugs remained fairly constant—150 permits for 142 patients last year, compared with 156 permits for 147 patients this year.

In the period under review 637 people were notified to the Chief Health Officer as drug addicts compared to 374 people the previous year. 1,943 permits for 1,096 patients were granted by the Chief Health Officer for treatment with drugs of addiction of addicted patients compared with 947 permits for 591 patients for the previous year.

Drug Security.

No substantial increase in the number of reports of breakings into pharmacies or armed hold-ups was seen in the past year. However, a considerable increase has occurred in the number of forged prescriptions being detected and of persons obtaining drugs of addiction by false pretences.

Therefore, it does appear that measures taken in previous years to minimise the possibility of armed hold-ups and breakings have continued to have some effect.

Licensing.

Officers of the Division continued to inspect the suitability of premises nominated in all manufacturing and wholesale licence applications and all permit applications before such applications are recommended to the Poisons Advisory Committee for their consideration. The suitability and qualifications of the applicant are also considered prior to such recommendations.

The number of licences and permits currently in force are as follows and the number of new licences and permits issued during the last year are listed in brackets :

Licence to manufacture drugs of addiction	12	(2)
Licence to sell drugs of addiction by wholesale	8	(0)
Licence to manufacture poisons (other than drugs of addiction)	171	(27)
Licence to sell poisons by wholesale (other than drugs of addiction)	267	(37)
Educational, Advisory and Research Permits	272	(103)
Industrial Permits	1,966	(450)
General Dealers' Licences	171	(20)
Retail Poisons Licences	3,803	(809)
Hospital Authorities	330	(17)

COMMUNITY WELFARE SERVICES.

The principal expansion this year has been the extension of the home help service to provide a service for the parents of physically handicapped children on the same basis as already provided for the mentally retarded. The extension commenced as a pilot study last year with a service restricted to the parents of children under the age of 16. However during this study material was collected on the needs of parents with older children. Based on the reports received it was possible to obtain sufficient funds to introduce the service on a State-wide basis and to lift the limit to children diagnosed as physically handicapped before the age of 18. Already 6 orientation courses have been held, including a segment on the physically handicapped.

In addition to the extra financial assistance provided to extend the special home help to the parents of physically handicapped children, increased finance has been provided towards the expenses incurred by the staff of the home help service in using private transport.

Following on from the seminars regional meetings of home help organisers have been developed and are proving equally successful. Further meetings have yet to be arranged before the whole State has been covered. So far the organisers have been unanimous in their praise of the conferences and all have expressed interest in their continuation on a regular 6-monthly basis.

The Commission of Public Health has constituted a Committee to investigate the establishment of a home help supervision training course. The Committee has already met and an outline for the course is expected late in 1977.

Another field which has benefited by additional finance is elderly citizens' clubs. Increased subsidies offered to Councils towards the maintenance of clubs will assist clubs in extending their general activities, include chiropody and encouraging the provision of hot meals.

Although there has been considerable expansion in some of the Community Welfare fields, the lack of financial assistance from the Commonwealth Government for capital subsidies for elderly citizens' clubs and welfare officers for the aged has curtailed expansion somewhat. The lack of finance has caused concern to Councils and to the aged, resulting in extra work.

Seventeen Regional Seminars on Community Welfare were held throughout the State during the year. These seminars enabled a number of officers of the Department to be present in a region at the same time, to meet with municipal officers and other interested persons providing community welfare services, to discuss and advise on the services, and to invite questions, comments and criticism. Thus a better understanding between the Department and locally employed persons has been created.

The staff of the Community Welfare Section remains unchanged except for a reshuffle of responsibilities and geographical areas.

Home Help.

The subsidy available to municipalities towards the conduct of the general home help service remains at four-fifths of the net cost to Councils of operating the service up to certain ceiling salary rates. These ceiling rates were revised at the beginning of the year and at that time were related to the Award rate for home helps. As there has been no increase during the year they are presently below the Award.

The maximum subsidy which may be applied for in respect of private transport used by the home help staff in providing the general service has increased from $1,625 to $3,000 per annum.

The Victorian Government is meeting the full cost to Councils for the service to the parents of handicapped children. These costs cover up to the Award wages of staff selected to undertake a 2-week orientation course and whilst they are providing the special service to the parents of handicapped persons. All reasonable travelling costs are also met.

During the last year the following subsidies were granted :—

New home help services	8 municipalities
Private transport—first approvals	27 municipalities
subsidy increases	152 municipalities

The following statistics compare 1975–76 with 1976–77 :

	1975–76	1976–77
Number of Councils granted subsidies	195	203
Total number of services operating	183	197
Municipalities in receipt of subsidies for private transport	153	179

Number of householders assisted (excluding special assistance to the parents of handicapped children).

	1975–76	1976–77
Aged and infirmed	14,454	17,465
Young families	9,538	10,628
(*c*) Others	1,925	2,648
	25,917	30,741
Eligible cases for whom no assistance available	123	247
Total hours assistance given to the aged (1.4.76 to 31.3.77) ..	1,114,400	1,309,582
Total hours assistance given to others than the aged (1.4.76 to 31.3.77)	448,710	443,958
Home Helps employed, December 1976—paid Organisers (full time and part time)	—	137
Full time	157	166
Part time	770	861
Hourly	1,683	1,953
	2,610	2,980
Number of Home Helps available to live in	25	30
Cost to Government (excluding the extension to handicapped) ..	$3,327,109	$4,360,493

Extension to Parents of Mentally Retarded and Physically Handicapped Children.

	1975–76	1976–77
Municipalities participating	151	162
Home Helps orientated since commencement	1,002	1,129
Families assisted	3,111	8,670
Visits	—	38,147
Hours	94,358	129,660
Cost to Government for extension to handicapped	$429,303	$593,411
Total cost to Government	$3,756,412	$4,953,903
Contribution from Commonwealth	$1,516,144	$2,026,707
Nett cost to the State	$2,240,268	$2,927,196

Elderly Citizens' Clubs.

Very few clubrooms were established during the last year, subsidies having been approved for these in 1975.

The increase of the maintenance subsidy by the State Government has greatly assisted Councils, but it is still inadequate for the larger metropolitan clubs. The original subsidy of $3,000 was increased to $6,000 where hot meals are provided, and to $4,000 for the clubs not providing hot meals. It is hoped that the additional $2,000 for clubs providing hot meals will encourage Councils to introduce this very needed service.

The chiropody conditions were amended earlier this financial year as many were finding it difficult to attract chiropodists to clubs. Also to give encouragement in the country, where chiropodists frequently have to travel from another township, provision has been made for consideration to be given to a subsidy in respect of private transport.

The position concerning the activities and services at clubs compared with last year is set out below :—

	1975–76	1976–77
Membership	38,687	43,081
Municipalities with hot meal services	106	117
Average number of meals weekly—		
(*a*) served at clubrooms	7,987	8,538
(*b*) through meals-on-wheels	25,901	31,954
Clubs providing handicraft	52	63
Chiropody at clubs	116	122
Chiropody treatments monthly	3,193	3,285
Subsidies Approvals		
Municipalities	166	169
Clubs	279	289
Capital and Maintenance	220	223
Capital only	17	13
Maintenance only	41	53
Government Expenditure	$	$
Capital Expenditure		
(*a*) Commonwealth	1,546,875	1,769,278
(*b*) State	207,026	155,529
TOTAL CAPITAL	1,753,901	1,924,807
	$	$
Expenditure Maintenance (State only)	417,789	522,784
TOTAL Capital and Maintenance	2,171,693	2,447,591

Balance of capital commitment—

	1976	1977
Commonwealth	1,898,285	695,357
State	194,097	38,579
	2,092,382	733,936

Total cost of Elderly Citizens' Clubs to Government since 1955 for Capital and Maintenance

	1976–77
Commonwealth	4,845,292
State	2,814,050
TOTAL	7,659,342

Welfare Officers for the Aged.

There has been no expansion in this field due to the lack of finance. Recommendations have been submitted to the Commonwealth in respect of 30 municipalities some of which have sought a subsidy for more than one officer. Most Councils are already employing these officers in expectation of eventual approval.

The welfare officers for whom approval has been granted continue to provide an extremely valuable service to the aged. The number of known elderly at risk registered has steadily increased, and these registers are proving very helpful in the provision of services and in keeping a watchful eye on the elderly living alone.

The approved subsidies are in respect of:

Municipalities	38
Welfare Officers	48
Cost to Government for 12 months period	$242,123

ENVIRONMENTAL HEALTH.

The emphasis on quality of life from an environmental and conservation point of view has increased over the past 12 months and the Premier has directed that environmental impact studies be carried out on all major projects.

Departmental officers have been involved either directly or indirectly in the following studies :

Port Phillip Bay coastal management
Stradbroke Area
Belgrave–Tecoma
East Gippsland
Westernport and Port Phillip Bay water quality
Yarra Falls redevelopment
Webb Dock area

While some have little public health significance, others are of major importance from both a psychological point of view as well as public health, in that the environment affects the food chain. An example of this is the high level of cadmium found in scallops in Corio Bay.

Waste disposal is a never ending problem and alternative means are being sought. Mildura Co-operative was granted a permit to dispose of their wash water containing high sugar content into a bore, while at the other end of the scale, Sunshine Council was given a limited time to accept chemical wastes into their garbage depot because of the adverse effect on ground water.

McCain's Australia was granted a temporary permit to dispose of the potato wastes in a treatment lagoon in Beaufort only after evidence was submitted that odours could be controlled.

Stringent air quality control has placed a burden on hospital incinerators, in particular the one situated at the Royal Melbourne Hospital. Some degree of relief is afforded by the M.M.B.W. in accepting comminuted food scraps into the Board's sewers.

Dyes used in the clothing industry although classified as safe from an occupational point of view, are not without some suspicion especially when one considers the multiplicity of chemical composition. Tests are being arranged to determine bacterial mutogenicity as some of the dyes could eventually reach a source of water supply.

Melbourne has had the advantage of closed catchments for the source of water supply. However, in the case of the Thomson Dam, some derestriction was approved which should not affect water quality.

Residential development in catchments is not without hazards and the Commission supported the Romsey Council in refusing the construction of a dwelling in the Cherokee catchment.

Oysters are continuing to be incriminated in food poisoning outbreaks due to contamination of estuaries. Attempts are being made to establish a farm at Shallow Inlet and because of its remoteness, purity of the estuary is guaranteed for several years.

Water re-use continues to attract attention and while the acceptable methods of irrigating golf and race courses and parks expand, the recharge of aquifers is beset with technical problems, especially blockages. The chemical component of sewage is the stumbling block in its use for irrigation of food for human consumption.

Vinyl chloride continued to attract attention because of the carcinogenic effect. Manufacturers are expanding their plants to remove the monomer from the raw polyvinyl chloride plastic.

In an attempt to reduce fire hazard in clothing, some manufacturers treated the fabric with TRIS. However, this substance is now known to be carcinogenic and has been withdrawn from the market. (See Poisons Division report).

The disposal of household refuse is creating a problem for some municipalities. To overcome the problem a committee has been formed to implement a regionalisation scheme in order to ensure adequate tipping space for many years to come.

State Emergency Services.

Mr. Bradshaw replaced Mr. Crowley and has been actively engaged in planning for emergencies. As the Health Department is housed in a high rise building with its inherent dangers of fire and sabotage, the need for training and equipment becomes more urgent.

Officers have continued to attend courses at Macedon and the State Emergency Services Centre in Queen's Road. Mr. Bradshaw also attended as an observer at the simulated air crash at Tullamarine and has been involved in education of hospital staff, medical students and health inspectors on the public health aspect of disasters.

Planning also involved an in-depth study of ambulance services in Victoria as pertaining to disasters.

A new plan is being developed to give greater control over disaster situations and equipment, in particular communication, is planned for the Department.

INDUSTRIAL HYGIENE.

Cases of Occupational Disease.

183 persons were medically reviewed and/or assessed for occupational disease. The following classifications were made :—

A. Lead poisoning or excessive lead absorption	110
B. Pneumoconiosis..	4
C. Occupational asthma	2
D. Chronic cadmium poisoning	5
E. No occupational disease	62

A further breakdown of each group follows :—

Under the Lead Workers (Medical Examination) Regulations 1973, approximately 2,500 lead workers were regularly examined. 131 such workers were referred to the Division on 224 occasions for detailed investigation of their lead status. A diagnosis of lead poisoning was made for 26 persons on 31 occasions, and a diagnosis of excessive lead absorption for 84 persons on 132 occasions. The former diagnosis resulted in the workers being put off work and the latter diagnosis resulted in transfer of the workers to work not involving exposure to lead. The cases of lead poisoning occurred in 7 factories and the cases of excessive lead absorption were from 15 factories.

There were three cases of silicosis, one case of hard metal pneumoconiosis but none of asbestosis.

One case of occupational asthma was due to western red cedar, and the other was non-specific and associated with the cutting of plaster board.

Amongst the cases diagnosed as having no occupational disease there was one case of mesothelioma, diagnosed by biopsy, but in which careful questioning failed to reveal any exposure to asbestos.

The five cases of chronic cadmium poisoning all showed renal tubular damage and two of them also showed severe airways obstruction with high lung volumes and a low CO transfer consistent with emphysema.

Chest X-ray Survey.

Large film chest X-rays were arranged through the Division for workmen exposed to silica and asbestos dust, 1,927 in all.

Fifteen workmen were medically examined to exclude pneumoconiosis, but only one man in this group had silicosis.

Radiographs also showed three cases of marked cardiac enlargement, one aortic aneurysm, and one case of marked hilar gland enlargement. Local doctors were notified.

The quality of radiographs was sub-optimal in 10% of cases, due to obesity, poor penetration, or poor inspiratory effort by the subject.

Lead.

The total number of tests for lead exposure performed by the Division were :—

Urinary coproporphyrin	1,060
Urinary specific gravity	1,079
Urinary lead	37
Haematocrit	375
Blood lead	371
Lead in air	15
Lead in paint	20
Lead in hair	3
Lead in mussels	6

This year saw the demolition of a blast furnace used for refining lead which had been responsible for many cases of lead poisoning. It has been replaced by a natural gas-fired rotary furnace and the improved design of the furnace together with efficient exhaust ventilation and better loading techniques is expected to result in a significant reduction in the degree of lead absorption experienced by these workers.

Cadmium.

A detailed investigation into the cadmium hazard in a pigment manufacturing plant was carried out. This involved the following tests :

Cadmium in air	14
Blood cadmium	55
Urinary cadmium	30
Urinary protein	13
Urinary specific gravity	9
Haematocrit	14

Five cases of chronic cadmium poisoning were diagnosed.

3 cadmium in hair analyses were performed on the hair from a suspected mussel poisoning case. These results were all within the normal range.

Solvents.

The Miran Infra-red Analyzer was used on several occasions for field analysis of solvents, particularly benzene, freon, isopropanol, perchloroethylene and methylene chloride. Surveys have been commenced into the extent of the usage of n-hexane, methyl normal butyl ketone and methylene chloride, three solvents for which unusual toxic effects have recently been documented.

Arsenic.

Eighty-one arsenic analyses were carried out for thirty-three people.

Inspections were carried out at two factories where timber preservatives containing arsenic are made. Exposure to arsenic is a problem at one of these and air sampling for arsenic as well as biological monitoring has been carried out.

Two cases of non-occupational arsenic poisoning were found. In one case a large ingestion of mussels taken from Port Phillip Bay was suspected as the source of arsenic, but it was subsequently proved that the concentration of arsenic in mussels taken from the same area was far below the level required to produce poisoning.

Organophosphorus Pesticides.

Five hundred and eighty estimations of red cell cholinesterase and one estimation of plasma pseudo cholinesterase were carried out. Thirty-one people were found to have depressed levels indicating excessive exposure to organophosphorus pesticides. Two people showed clinical signs of poisoning, the pesticide involved in both cases being Mevinphos.

Most of the cases of excessive exposure without clinical symptoms resulted from the use of Dichlorvos in the treatment of stored grain and the manufacture of pest strips. Recommendations for improvements have been made where necessary and so far these have been successful in reducing the exposure.

Surveys of cholinesterase levels of farmers in the Nar Nar Goon and Silvan areas were carried out. Although attendance was poor, these surveys will be continued and extended in order to increase public awareness of the problems involved in handling these pesticides.

Other Pesticides.

Twenty-six blood samples, mostly from pest control operators, were analysed for chlorinated hydrocarbons by the Health Laboratories on our behalf.

A woman died as a result of ingestion of a fatal dose of Paraquat (herbicide). It is unlikely that this poisoning was accidental.

Mercury.

Ten factories and laboratories where mercury is used were inspected and mercury-in-air analyses carried out.

One hundred and thirteen people were tested for mercury absorption. Ten people had absorbed excessive amounts of elemental mercury but none of these showed signs of poisoning. One person absorbed excessive amounts of methyl mercury from eating large amounts of shark for several months and an alteration in his diet was recommended.

Nineteen samples of hair were analysed for mercury for the Commonwealth Department of Health. The results are to be correlated with dietary intake of fish.

Six hundred and seventy samples of hair obtained from the general population were analysed for mercury, concluding the Departmental survey into mercury absorption due to fish consumption. Altogether eight hundred samples were analysed. Of these, nineteen contained more than 6 p.p.m. Hg and required further investigation. So far none of the high levels can be traced to excessive intake of methyl mercury in the diet. In connection with this survey six hair shampoos and other preparations were analysed for mercury.

Dust.

Twenty-six gravimetric dust determinations and six estimations of free silica were undertaken.

A survey of dust levels in foundries was commenced. So far one foundry has been found to have unacceptably high dust levels, and appropriate action is being taken.

Carbon monoxide.

Seventeen determinations of carboxyhaemoglobin were undertaken to assess exposure to carbon monoxide in such situations as city traffic, aircraft, and in two situations involving exposure to methylene chloride which has recently been shown to be metabolized to carbon monoxide.

Asbestos.

The Division has adjusted its facilities for asbestos sampling according to the " membrane filter method for estimating airborne asbestos dust " recommended by the National Health and Medical Research Council. Using this method a survey of fibre levels in the factories of the major users of asbestos has been commenced. They include manufacturers of friction materials (3), building materials (3), and textiles (2). Appropriate measures have been recommended in the two situations where fibre levels were found to be excessive.

Throughout the year officers of the Division have also been required to assess asbestos hazards in various other situations on behalf of the Arbitration Commission, unions, Government instrumentalities and private individuals.

A total of 52 asbestos analyses were performed.

General Chemicals.

Several inspections of waterfront situations were carried out by the scientific staff under the agreement that recommendations on health aspects on the waterfront be dealt with by State Health Officers.

Other situations investigated by the scientific staff included the spillage of soil fumigant in a semi-trailer and two incidents in goods trains, one involving spillage of formaldehyde and the other a leakage of sulphur dioxide from a cylinder.

Field equipment was used for the analysis of many atmospheric contaminants such as toluene diisocyanate, carbon monoxide and fluorides.

As a result of the Division's investigations major alterations in ventilation equipment were carried out in six factories. These alterations were to reduce high levels of solvents, oil fumes, siliceous dust, lead dust and acid fumes. Recommendations were made to some 20 factories to improve the working environment by improved techniques in the handling of hazardous chemicals.

Many enquiries were received requesting advice on the toxicity and safe handling of various chemicals.

Pest Control Operators' Regulations 1972.

These Regulations have now been in operation for five years and at the end of 1976 the currently held registrations and licences were as follows :—

Registration of business of pest control	97
Class 2 Licence as pest control operator	178
Class 3 Licence as pest control operator	54

Radiation.

The numbers of licences issued to various sections of the community for the possession and use of irradiating apparatus and for possession, use, sale, transport or disposal of radioactive substances under the Irradiating Apparatus and Radioactive Substances Regulations for the year were as follows :—

Category of Licence.	Irradiating Apparatus.	Sealed Source.	Unsealed Source.	Transport.
Chiropractors	105	..	..	..
Dentists	502	..	..	..
Educational and Research	30	34	57	..
Industrial	52	124	31	5
Government	22	23	25	..
General Practitioners	170	2	7	..
Veterinary	102	10	..	..
Hospitals	105	4	26	..
Other Radiology	16	12	9	..
X-ray Clinics	25	..	3	..
Totals	1,129	209	158	5

The Australian Radiation Laboratory now regularly provides this Division with film badge reports from some 319 installations where people are exposed to ionizing radiation. The film badge reports indicate that the general level of radiation dose received by these people is well below permissible levels.

During the year the Division continued to provide a general radiation protection service, and 51 radiation installations of various types were inspected. X-ray protection designs were calculated for 10 establishments. The low level radioactive waste disposal service for users of radiopharmaceuticals in medicine and research has continued to operate satisfactorily. The Division has arranged for appropriate storage or disposal of a number of radioactive sources.

Associated with the radiation surveillance required during the visits of the nuclear powered warships, U.S.S. Truxtun and U.S.S. Longbeach, the Division provided staff to undertake the duties of Radiation Monitoring Officer and member of the Radiation Monitoring Group. Meetings of the Nuclear Powered Shipping Panel were attended in order to facilitate the arrangements for the visits.

Fourteen microwave ovens were tested for leakage of microwave radiation, at the request of owners.

Noise.

Noise level assessments in relation to noise-induced deafness were undertaken in 36 factories and appropriate recommendations made.

Audiometric tests were carried out on 3 employees working in noisy industries.

The Division has been substantially involved in the drafting of the proposed Noise Regulations to Combat Industrial Deafness. In August 1976, a draft document was circulated to interested parties for comment. The document was reviewed in the light of the comments received and a revised draft submitted to the Minister for his consideration.

The proposed regulations will require the employer to provide hearing protection for employees whose noise exposures are excessive. It is also proposed that the Chief Health Officer will have the power to require noise control measures and the power to require audiometric testing of employees.

The advent of noise legislation is expected to make a significant contribution in this important field.

ENGINEERING DIVISION.

Sewerage.

Three new town sewerage schemes at Lakes Entrance, Pakenham and Rainbow were completed or brought into partial operation during the year. All systems employ treatment in waste stabilisation ponds with some disposal of effluent by land irrigation.

Construction commenced on schemes at Bellbridge (Tallangatta), Nagambie and Tongala. New sewerage authorities were constituted for the towns of Halls Gap, Portarlington, Rutherglen and Wahgunyah (Rutherglen). There are now 128 sewerage authorities constituted in Victoria under the Sewerage Districts Act and 104 of these are in operation. During the past year 92 inspections of town sewage treatment works were made and samples taken for analyses at the Health Laboratories. The Authorities were advised on the effluent test results and comments were made on the operation and effectiveness of the works where necessary.

Subdivisional Sewerage Schemes.

Eighteen sewerage schemes for subdivisions pursuant to the Local Government Act and Health Act were examined. Two schemes, Cardigan (Ballarat) and Healesville, will serve subdivisions housing over 1,000 persons in each. Altogether the schemes will cater for over 6,000 persons, which eliminates the necessity for approximately 1,800 septic tanks. During the year 25 inspections of subdivisional schemes involving inspection of sites and operating systems were made.

Septic Tanks and Small Sewage Treatment Plants.

Plans of 155 new installations and 34 alterations to existing systems were examined and approved. A total of 353 systems were inspected, most of which were found to be in compliance with the Septic Tank Regulations. Action was initiated regarding systems not in compliance with the Regulations.

Conferences and Lectures.

The 39th Annual Sewerage Engineers' and Operators' Conference was held in Melbourne on the 16th and 17th September. Approximately 200 delegates attended during the two day Conference which dealt with aerated pond systems, operator training, trade waste problems, plant operation and maintenance problems.

Lectures were again delivered by Section staff on sanitary engineering to Plumbing Inspectors' Conferences, Health Inspectors' Diploma Courses and to a Post-graduate Course in Public Health Engineering.

In October the Senior Engineer (Sanitation) attended the Eighth International Conference of the International Association on Water Pollution Research in Sydney.

The staff of the Sanitation Section have continued to spend an increasing amount of time answering technical enquiries and forwarding information to consulting engineers, architects, Health Inspectors and other Government Departments.

Water Treatment Section.

Officers in this Section carried out 110 inspections of water supplies and 94 inspections of swimming pools. Sampling was undertaken on occasions for various purposes, including the determination of nitrate or fluoride levels and for submission to laboratories for bacteriological analysis.

Water Supplies.

Several water supply authorities installed chlorination plants on the recommendation of the Commission following reports of significant bacteriological counts.

Swimming Pools.

During the year the Commission initiated amendment of the regulations to revoke conditional exemption after July 1st, 1977.

Fluoridation.

Steady progress was made towards completion of the plants serving Melbourne and the Mornington Peninsula. Several major plants are now in operation and the fluoride concentration is being increased to the optimum level.

The Commission further resolved to direct fluoridation of those remaining water supplies serving a population in excess of 10,000, which have not already been incorporated in the fluoridation programme.

Building Surveying Section.

Approval of plans and specifications for public buildings examined during the year totalled 1,297, as shown in the following table :—

Class of Building.	Sketch Plans for Approval in Principle.	Working Drawings for Approval.	Electrical Installations.	Mechanical Ventilation Installations.	Separate Structural Examinations.	Totals.
Institutions	1	5	3	..	1	10
Public Buildings (under Public Building Regulations) ..	40	502	341	69	40	992
Tertiary Education Buildings	3	38	30	22	13	106
Schools	8	253	136	30	11	438
Pre-Schools and Infant Welfare Centres ..	63	223	116	51	2	455
Amusement structures/tents	1	10	17	43	1	72
Child Minding Centres	3	30	83	19	..	135
Mentally Retarded Centres	3	18	12	1	1	35
Elderly Citizens Clubs	15	36	25	24	1	101
Exhibitions/seating plans	3	31	..	..	..	34
Special Accommodation Houses	..	11	7	13	..	31
Totals	140	1,157	770	272	70	2,409

There were 6,095 day inspections of public buildings during the year and 4 inspections were made at night during public occupation of the buildings.

Twenty-nine (29) Certificates of Safety for Amusement Park Structures were issued, three hundred and sixty-three (363) were renewed, and nineteen (19) transferred.

Approval was given by the Public Service Board in January 1976 to re-organise the Building Surveying Section with the establishment of a structural engineering cell and a mechanical and electrical engineering cell in the Section. With the appointment of additional building surveyors and building inspectors, together with additional direct administrative support, the Building Surveying Section has achieved considerable improvements during the year.

Land Waste Management Section.

This Division administers the powers and functions delegated by the Environment Protection Authority to the Commission of Public Health. The Commission is the Delegated Agency responsible for the transport and discharge of all wastes including solids, liquids and sludges to land, i.e. the control of soil pollution. As such it is responsible for receiving licence applications, issuing and amending licences, checking licence conditions and investigating breaches of the Act.

Licensing Statistics as at 30*th June*, 1977.

Applications received/accepted	1,278
Applications cancelled	103
Licences issued	951
Licences amended	190
Licences refused	1
Licences pending	223

Items of Special Interest during 1976/77.

1. As a result of a third party appeal the Environment Protection Appeal Board determined that the Sunshine Tip should cease accepting liquid wastes after 31st March, 1977.

   Its recommendations included :

   (*a*) Preliminary treatment of such wastes by the bio-bed or a similar method prior to their discharge into tips or quarries which have no ground water pollution problems.

   (*b*) Preliminary treatment of liquid wastes containing a high water content to split off water fit for discharging to the sewer and the residue for discharge into tips or quarries which have no ground water pollution problems.

   (*c*) The deposit of liquid waste into tips or quarries should only be authorised as a last resort and then only if the quarry is sealed by the nature of its geological composition or otherwise against the risk of leachate pollution.

2. (*a*) The Inter-departmental Committee on Aquifer Pollution was reconvened under its new title of the Inter-departmental Committee on Liquid Waste Disposal. Its function is to advise the Government on both short and long term policies for liquid waste disposal in the Metropolitan area. The Commission is represented on this Committee. Officers of the Division have spent a considerable amount of time preparing as well as evaluating submissions made to this Committee.

   (*b*) Following recommendations of the Committee, four councils were addressed by the Ministers of Local Government and Conservation and requested to assist in the short term solution of the problem of disposal of liquid wastes. Following Council agreement their four tips were approved under the Health Act and licensed for the reception of liquid wastes. All four tips are geologically favourably located.

   (*c*) There are now five tips (four municipal, one private) licensed for the reception of liquid wastes in the Metropolitan area. There are also several factories specialising in the treatment of certain liquid wastes. No short term problems are therefore foreseen with the disposal of the vast majority of liquid wastes.

Current Status of Licensing.

Most sites in the Metropolitan area have been licensed.

The licensing of the large disposal of liquid wastes generated in country areas such as casein whey, winery wastes and abattoir wastes is currently the major problem being faced by the Division. This requires a knowledge of lagooning systems, irrigation practices, soil structures and suitable crop types : a field completely different to normal municipal treatment practice.

SPECIAL HEALTH SERVICES SECTION.

Aim.

The aim of this Section is to upgrade the health status of people of Aboriginal descent living in Victoria. This will ultimately be achieved by increased confidence in themselves and their ability to make appropriate choices about health practices.

Staff.

The staff currently consists of :

1 Supervising Medical Officer
1 Health Education Officer
1 Senior Sister
6 Visiting Nurses
14 Community Health Aides
2 Administrative Staff

Of the 25 staff in this Section 15 are Aboriginals of whom 14 are employed as Community Health Aides. This has allowed the Section to be more effective in its role of working with the Aboriginal community as there is now far better communication with the people for whom the service was established.

There has been considerable staff turnover in this Section during the year. It is not always easy to find non-Aboriginal staff who will be suitable for the work involved. The staff turnover among the Community Health Aides was 5 out of the 14 employed ; one is working for an Aboriginal co-operative, 2 are employed by other Government Departments and the other two returned to care for their families.

Training.

All staff receive pre-service training and ongoing in-service and field training.

The Visiting Nurses are trained in screening procedures (vision, hearing, nutritional status, diabetes, hypertension) so that they may detect health problems and refer patients for suitable medical follow-up. They are educated about the particular health problems of Aboriginals and in concepts of team work which is the basis of the approach in Victoria.

All Community Health Aides receive education about basic health needs and practices. With ongoing supervision in the field they gain increased understanding of the reasons underlying some of the health practices and this has enabled them to teach these to their own people.

Regional Functions.

The work at the local level is undertaken by a team based in each geographical area. Teams are currently based at:

Mildura
Swan Hill
Shepparton
Warrnambool
Morwell
Metropolitan.

Each team has one Visiting Nurse and 2 to 4 Community Health Aides. The Morwell team has 1 Community Health Aide based at Lake Tyers who works closely with all the local agencies, schools and health centres. The Metropolitan team has 4 Community Health Aides, 2 of whom have been closely associated with the " halfway house " to which aboriginal alcoholics return after their discharge from one of the alcohol treatment centres. This team has also embarked on Health Education Programmes in the student hostels. Members of the team are also working closely with the Youth Support Setion of Social Welfare to plan Health Education Programmes for their hostels.

All regions provide a family support service in crisis situations and on-going " parenting " education.

Specific Health Promotion Programmes.

This year has been marked by Health Education Programmes initiated by the Aboriginal staff of this Section in response to (a) stated needs by the community; (b) needs discerned by the staff. Such programmes have included education about alcohol, human sexuality, immunisation, venereal disease, sport and recreation, family spacing.

Special Health Services staff have assisted the community health audiologist in his visits to Shepparton, Swan Hill, Mildura and Warrnambool. As a result of these visits it has become apparent that the incidence of ear infections and hearing loss is extremely high among Aboriginal children (50% to 60% of those seen requiring referral for treatment).

In some areas the level of immunisation in children has been raised through constant encouragement and follow-up. In other areas it appears that the only way to achieve high levels of immunisation will be to allow the local Visiting Nurse to be delegated this responsibility. Some areas report a good acceptance of rubella immunisation by the teenage girls.

There has been a concerted effort through the " Fee for Service Dental Scheme " to provide easier access for Aboriginals to obtain dental service. It has been used as a preliminary to a dental education programme which must lead to the use of hospital dental clinics which are being established at all major hospitals in the State. It is hoped that emergency treatment will give way to prophylaxis as children are encouraged to attend for 6-monthly check-ups.

Growth screening and screening for hypertension and diabetes are taking place in an organised manner in the western districts of the State. It is intended that this will be extended to other areas during the coming year.

Other activities aimed at promoting a sense of identity among the Aboriginal children include promotion of youth clubs, team sports and involvement of our staff in school programmes.

Co-ordination of Health Services and Co-operation with Other Agencies.

The Special Health Services Section works closely with other agencies. At a formal level the Senior Medical Officer, Senior Sister and Health Education Officer attend monthly meetings of the Health Function Conference arranged by the Department of Aboriginal Affairs with a view to co-ordinating health services for the Aboriginal Community.

Liaison meetings between various Government and Aboriginal agencies are frequently attended to clarify roles in dealing with specific problems e.g. suitable placement of Aboriginal children.

At the local level all the Special Health Services teams are working closely with Government and non-Government Departments and with opinion leaders from the Aboriginal communities.

The co-operation of such groups as the Special Education Unit, Early Childhood Development Complexes, Aboriginal Hostels, Aboriginal Co-operatives and Municipal Councils has meant that our staff have had offices from which to work and facilities in which to mount Health Education Programmes. The Section acknowledges the help of these groups.

Special Health Services staff help Aboriginal people to use the Aboriginal Medical Services by providing follow-up care and ensuring they keep future appointments.

Since Special Health Services began it has investigated the availability and suitability of existing health services for disadvantaged people. Staff have been involved in discussions at the local and Departmental level to try to improve the quality of care.

PRISON MEDICAL SERVICES.

The Prison Medical Service provides medical treatment for all inmates of Social Welfare institutions and Wards of State throughout Victoria.

The bulk of this service is provided by general practitioners and specialists at a local level.

In the larger Social Welfare Institutions a medical officer is usually employed on a sessional basis, but two medical officers are employed full-time at Pentridge.

In specific charitable and social welfare institutions that have a staff member with appropriate medical or nursing training, basic medical supplies are provided by the Department of Health.

COST OF MEDICAL AND DENTAL SERVICES (excluding Salaries).

Year.	Prisons.		Other Social Welfare Department Institutions.	
	Medical.	Dental.	Medical.	Dental.
1975–76	$67,548	$23,186	$113,508	$81,406
1976–77	$71,713	$26,904	$146,162	$164,982

In addition to basic medical services a number of other specific programmes include :—

1. Tuberculosis screening at Pentridge.
2. Liaison with the Alcoholic and Drug Dependent Persons Services Branch of this Department and the Alcohol and Drug Unit of the Social Welfare Department for known drug abusers.
3. The Prison Psychiatric Service.
4. Prison Hospital officer training.
5. The centralisation of prison medical records.
6. Dental service.*
7. Optometry service.*

Throughout 1976–77 a start was made to provide new hospital beds and equipment at Pentridge, this being the first stage of a three year programme to upgrade medical services and equipment for prisoners.

The proposed security ward at St. Vincent's Hospital has started to be built and is expected to be functioning in March, 1978.

*N.B. The prisoners in general have to buy their own false teeth and spectacles unless a special case can be made on their behalf.

SPECIAL ACCOMODATION HOUSES.

The following have been approved by the Commission between 1st July, 1976 and 30th June, 1977 :—

New Houses registered	83
Registration Renewals of Houses	133
Transfers	25
Re-assessments	10
Plans and Specifications approved	18
Managers or Assistant Managers	38

181 special accommodation houses are now throughout the State, with 34 applications under consideration by the Commission.

15 applications for registration have either been withdrawn before registration was granted, or registration has been refused.

Of those refused, one (1) was for having unsuitable premises, and four (4) because the Commission considered the proprietors concerned to be unsuitable.

Twelve (12) registrations have been cancelled by the relevant proprietors.

As the relevant legislation is still comparatively new, various aspects have been tested by proprietors in court. The matters of nursing care, advertising, and suitability of both premises and proprietor have been determined by court decision. There has been no need to vary the Regulations but due to a County Court action the proper procedure for refusal of approval of a proprietor has been demonstrated.

Officers of the Social Welfare Department, members of the Victoria Police, and Australian Narcotics Bureau officers have been co-operative in assisting Departmental officers in the control of proprietors, the placement of inmates, and attending to inmates' needs. Within the Ministry of Health valuable assistance in the placement of inmates needing nursing home or hospital care has also been given by officers of the Hospitals and Charities Commission and the Mental Hygiene Branch.

Telecom Australia has agreed that Special Accommodation Houses will be listed as such in future telephone directories and the term " Rest Home " will no longer be used. The Country Fire Authority has been unable to submit reports upon premises within its area, but has proposed a course for Departmental officers.

Planning for Retirement.

The Early Planning for Retirement Association has made good use of its film on retirement.

Many programmes for interested community groups have been conducted.

Early in 1977 the State Government conducted a seminar for public servants in the State Film Centres.

CHILD MINDING CENTRES.

The following have been approved by the Commission in the year under review :—

New Centres	37	Renewal of Centres	324
Transfers	19	Re-assessments	35
Plans and Specifications	27	Group Leaders	256

Total number of Centres currently registered	339
Total number of Centres closed	28

PEST CONTROL.

Rodent control over the past 12 months has consisted of assistance and advice to Harbor Trust personnel engaged in rodent control throughout Harbor Trust land and waterfront areas.

Rat Infestation on the Wharves.

Rat infestation on the Harbor Trust waterfront area appears to be at a low level at present due to continual baiting of areas likely to become rat-infested, and by regular inspections by Harbor Trust staff.

Liaison with Commonwealth Quarantine officials has also been very satisfactory in regard to rodent control within the Harbor Trust's lands. All notifications of rat infestation from this Department are investigated and remedial action is taken.

Rat Infestation in the State.

Numerous inspections of creeks, open drains, public institutions and State Prisons were undertaken and advice given as necessary to overcome particular problems. Many enquiries from the general public were also attended to.

Discussions and investigations were held with a number of municipal Health Inspectors in relation to pest control involving flies, cockroaches, stored product pests, etc., and appropriate advice was given.

General pest control was maintained and investigations into a variety of complaints were carried out. These included insect infestation of foods, cockroaches in food premises, hotels and hospital kitchens, fly and rat breeding in garbage depots, poultry farms, abattoirs, flour mills and other areas.

In August 1976, the Pest Control Officer attended a special two weeks Medical Entomology course in Darwin conducted by the Commonwealth Department of Health in all aspects of vector control and involving the latest in modern misting techniques.

Between December 1976 and March 1977 the Pest Control Officer and Health Inspectors of the Department participated in the mosquito control campaign. It was necessary to draw up special maps and to collate data submitted by the monitors and municipal Health Inspectors in known mosquito breeding areas throughout the Murray Valley Region.

LIQUOR INSPECTION.

The number of Licensed premises in Victoria at the end of June 1976 total 3,094, as follows :—

	Total	*Metropolitan Area*
Hotels	1,440	637
Wholesale Liquor Merchants	103	86
Retail Licensed Grocers, etc.	728	500
Clubs	449	259
Restaurants	273	213
Vignerons	48	7
Cabarets	25	22
Theatres	5	5
Aus/Wine Licensed	14	11
Brewers	7	5
Cider Taverns	1	1
Tourist Facility	1	—
	3,094	1,746

Not included in the above are racecourses and cricket, football and show grounds.

Licensed premises visited :—

Hotels	318	not including Melbourne airport bars.
Bottling Establishments	12	
Licensed Grocers	80	
Wineries	3	
Showgrounds	1	
	414	

Melbourne airport bars were found satisfactory, after several complaints were received regarding assumed adulteration of beer, such as not retaining a head, etc. The complaints were investigated and the alcohol content was found within the range, as manufactured. These complaints resulted mainly for technical reasons such as brewing, insufficient carbonation, excessive use of detergents, beer temperatures, and " lines " maintenance.

Some complaints were received regarding vodka, white rum, French brandies, and sweet sherry but all, on analysis, were found satisfactory.

Following press publicity regarding adulterated spirit found in New South Wales, said to contain methyl alcohol, samples of the products were obtained for analysis and submitted to the State Health Laboratory. No adulteration was evident.

Numerous enquiries were made regarding labelling and where possible these were discussed on a personal basis with Principals of the companies concerned. Labelling problems arise due to the present regulations not requiring " copy " of proposed labels to be submitted for approval by this Department before printing, as is required by the Commonwealth Spirit Act.

Several local and imported wines were submitted for pesticide analysis and estimation.

Opened bottles of spirit tested :—

Whisky	..	Australian	607
		Imported	1,574
Brandy	..	Australian	560
		Imported	230
Gin	..	Australian	389
		Imported	167
Rum	..	Australian	283
		Imported	452
Vodka	..	Australian	281
		Imported	25
Schnapps	..	Australian	18
		Imported	2
Tequila	..	Imported	1
			4,589

Of the 4,589 tested 17 were found not to comply with the alcoholic strength for that particular brand of spirit examined. As there was insufficient for analysis in each case the licensee was warned and the contents of the bottles disposed of into the sink.

All spirits examined for alcohol strength were found to be within the minimum strength required under the Food and Drug Standards Regulations.

Testing for draught beer was carried out in all hotels visited. All were found within the alcoholic range as brewed, and all complied with the minimum strength for beer under the Food and Drug Standards Regulations.

FREE TRAVEL TO HOSPITALS.

During the year under review there was a large decrease in the number of applications received compared with the previous year. (17,853 compared with 29,508—a decrease of 11,655).

Of those, 17,772 were issued with free rail vouchers and/or tram tickets to attend a public hospital for treatment. The remaining 81 were rejected as the applicants either failed to qualify as " persons of similar limited means to a pensioner ", were not attending approved institutions, were visiting patients, or proposed to use other than public transport.

The grant allocated to the Free Travel Section for 1976–77 was $155,000 compared with $140,000 for the year 1975–76. The total expenditure was $154,574.

Refunds were granted to 32 applicants.

CEMETERIES.

758 public cemeteries and private burial grounds are now listed in the records of the Commission of Public Health.

Several enquiries were received during the year concerning the establishment of private burial grounds and one is being proceeded with at present.

The trend towards the establishment of lawn burial sections in existing cemeteries continued, with numerous Cemetery Trusts developing such sections. Reduced maintenance costs and a more acceptable appearance are the main reasons behind this growing trend.

Maintenance grants totalling $15,000 were allocated to cemeteries whose income was thought insufficient to maintain their reserves. The present economic climate has shown that these grants are losing their value and an increase in the total allocation would enable more suitable grants to be made in some instances.

The Trust of the Fawkner Crematorium and Memorial Park received approval to borrow $500,000 to finance the reconstruction of the existing crematorium complex.

During the year new licences to sign Confirmatory Certificates for Cremation were issued to nineteen medical practitioners and to date 467 licences have been issued.

A total of 27 licences to exhume the remains of bodies were issued, compared with eighty-three in the previous year.

TRAINING OF HEALTH INSPECTORS.

Fifty-four candidates successfully completed their training as Health Inspectors, after passing the final examinations in December 1976. These candidates were duly recommended to the Royal Society of Health, London, for the Diploma of Public Health Inspection.

Forty-four students are undertaking the final year of the course in 1977.

HEALTH EDUCATION CENTRE.

Cancer education within this State is carried out mostly by the Anti-Cancer Council of Victoria—assistance however is given to their programme by members of the Health Education Centre's staff.

There has been increasing involvement in this regard in " Quit Smoking Clubs " sponsored by the Anti-Cancer Council of Victoria and other organisations ; these are designed to help confirmed smokers to give up if they wish.

The Health Education staff has been joining with the Anti-Cancer Council of Victoria in the conducting of seminars for journalists and teachers on the various aspects of cancer, and it is envisaged that this co-operative work will extend over the next 12 months.

PROSECUTIONS.

During the year sixty contraventions of the Health Act were forwarded to the Law Department after the Commission had recommended that legal proceedings should be instigated.

This was an increase of 200% on the previous year, the main increase being in relation to plumbing works which were carried out by unregistered persons or were defective in workmanship.

A summary of the prosecutions undertaken follows :—

Carrying out plumbing work whilst unregistered	11
Carrying out defective plumbing work	10
Employing an unregistered plumber	2
Carrying out defective gasfitting work	2
Other offences relating to plumbing and gasfitting work	8
Conducting an unregistered Child Minding Centre	2
Failure to provide required amount of staff at a Child Minding Centre	2
Failure to comply with the conditions of registration for a Child Minding Centre	3
Other offences relating to operation of Child Minding Centres	3
Operating an unregistered Special Accommodation House	7
Offences relating to incorrect advertising of Special Accommodation Houses	3
Conducting a Special Accommodation House with number of inmates greater than permitted	1
Other offences relating to operation of Special Accommodation Houses	4
Selling adulterated food	2

LEGISLATION.

During the year Royal Assent was given to the *Health (Fees) Act* 1976.

This Act includes :—

(*a*) Increases in some maximum fees payable for the granting, annual renewal or transfer of registration of premises required to be registered under the *Health Act* 1958.

(*b*) Increases in the maximum fees payable to Municipal Councils for the installation of septic tank systems.

(*c*) Increases in the maximum fees payable in respect of the examination and licensing of plumbers and gasfitters and cinematograph operators.

(*d*) Increases in the maximum fees payable for the examination of plans and specifications of permanent and temporary public buildings.

In addition to the Regulations referred to elsewhere in this report the following were approved :

Health (*Skin Penetration*) *Regulations* 1977.

These Regulations control the registration of premises and the operation of persons involved in ear-piercing, tattooing or other like processes involving penetration of the human skin.

Health (*Mosquito Control*) *Regulations* 1976.

These Regulations provide procedures for the declaration of areas of the State as Mosquito Control Area(s) and for the eradication of mosquitoes in those areas.

Infectious Diseases (*Exclusion from School*) *Regulations* 1976.

These Regulations are a respecification of the exclusion from school provisions of the principal Regulations.

Health (*Nightsoil and Sewage Land*) *Regulations* 1976.

These Regulations consolidate the Nightsoil and Sewage (Contamination of Land) Regulations 1967 and give effect to recommendations of the Report of the Joint Select Committee on the Meat Industry :—

The Regulations provide for :—

(*a*) the standard of purification of nightsoil and sewage ;

(*b*) the regulating of branding of cattle which are depastured on Sewerage Authority land on which unpurified nightsoil or sewage has been deposited ; and

(*c*) the specification of the brands to be used by individual Sewerage Authorities.

A number of older regulations made under the Health Act have also recently been the subject of review and consolidation, and are expected to be in operation next year. They include the following :—

Camping Regulations.

Cattle Saleyards Regulations.

Food Premises/Eating House Regulations.

General Sanitary Regulations.

Harmful Gases, Vapours, Fumes, Mists, Smokes and Dusts Regulations.

Irradiating Apparatus and Radioactive Substances Regulations.

Public Building Regulations.

Septic Tank Regulations.

Respectfully submitted,

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} Members of the Commission.

J. F. RAYNER, Acting Secretary,
28th September, 1977.

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